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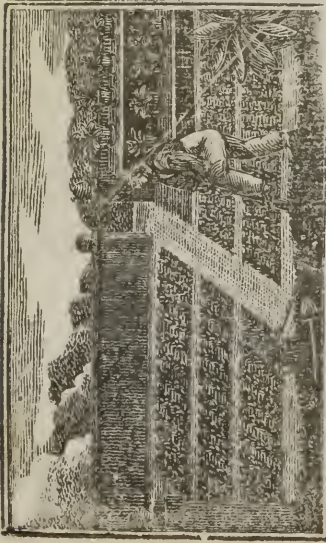
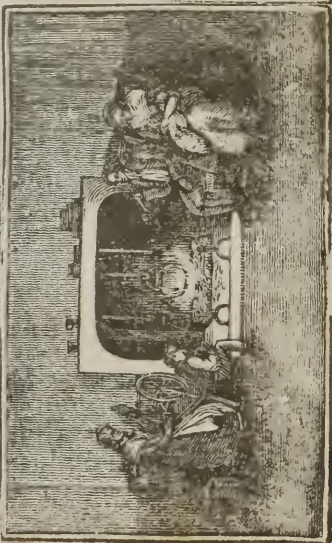
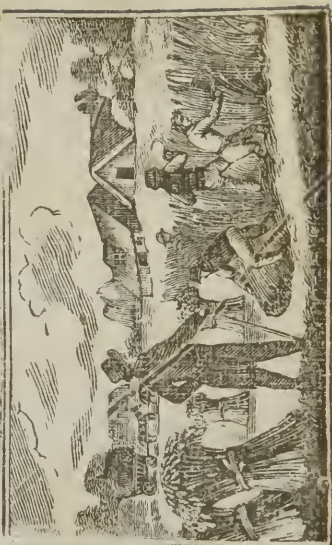


WASHINGTON, D.C.

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FAMILY RECEIPTS,

OR

PRACTICAL GUIDE

FOR THE

HUSBANDMAN AND HOUSEWIFE,

CONTAINING A GREAT VARIETY OF VALUABLE RECIPES,
RELATING TO

AGRICULTURE,
GARDENING,
BREWERY,

COOKERY,
DAIRY,
CONFECTIONARY,

DISEASES,
FARRIERY,
INGRAFTING,

AND THE VARIOUS BRANCHES OF

RURAL AND DOMESTIC ECONOMY.

TO WHICH IS ADDED

A PLAIN, CONCISE, METHOD OF KEEPING FARMER'S ACCOUNTS,
WITH FORMS OF NOTES OF HAND, BILLS, RECEIPTS, &c. &c.

BY H. L. BARNUM,

*Editor of the "United States Agriculturist and Farmer's
Reporter."*

PUBLISHED BY A. B. ROFF.

LINCOLN & CO. PRINTERS:

CINCINNATI:

1831.

DISTRICT OF OHIO, *to wit* :

BE IT REMEMBERED, that on the 14th day of March, in the fifty-fifth year of the Independence of the United States of America, A. D. 1831, *H. L. Burnum* of said District, hath deposited in this office the title of a book, the right whereof he claims as proprietor in the words following, to wit: "FAMILY RECEIPT., or PRACTICAL GUIDE for the Husbandman and Housewife, containing a great variety of valuable recipes, relating to Agriculture, Gardening, Brewery, Cookery, Dairy, Confectionary, Diseases, Farriery, Ingrafting, and the various branches of Rural and Domestic Economy; to which is added a plain, concise method, of keeping farmer's accounts, with forms of notes of hand, bills, receipts, &c. &c. By H. L. BARNUM." In conformity to the Act of the Congress of the United States entitled "An Act for the encouragement of learning, by securing the Copies of Maps, Charts, and Books to the authors and proprietors of such copies during the times therein mentioned," and also to the Act entitled "An Act Supplementary to an act entitled an act for the encouragement of learning, by securing the Copies of Maps, Charts and Books to the authors and proprietors of such copies during the times therein mentioned, and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints.

Attest, WILLIAM MINER,
Clerk of the District of Ohio.



PREFACE.

THE title and contents of this work present a better preface, perhaps, than we could give by enumerating all the claims usually accompanying the introduction of books.

An attempt to assume any thing more than utility in this case, might convict us of the "crime" so frequently charged against the quill fraternity; vulgarly called "clipping books and cabbaging ideas."

We doubt whether *any person* (whose intellect is on a parallel with ours,) can produce such a heterogenius mass of matter as may be found in the following pages, without committing plagiarism.

The recipes were selected principally from the following standard works: "*Domestic Encyclopedia*," "*New American Gardener*," "*American Farmer*," "*New England Farmer*," "*Journal of Health*," "*Genesee Farmer*," "*Mackenzies Receipts*," "*Farmer's Guide*," "*Loudon's Agricultural Encyclopedia*," &c.

If we should name the author of every article in this book, it might be taken for a lexicon of proper names, instead of a work devoted to the arts.

It is enough for us to say that the recipes were collected from many different sources.

“ Just as the bee collects her sweets,
From every flower and shrub she meets,
So what from various books I drew,
I give, though not the whole as new.”

Some original recipes are given, but the majority of them are borrowed from the most celebrated American and European authors.

The prescriptions for diseases have been confined to the most simple remedies, and we have not trusted to our own feeble judgment on this subject, without consulting some of the most skilful physicians.

The whole taken together comprises a valuable book for families of any occupation or situation in life. We do not feel disposed to puff, but having given credit to others for the matter, we feel no delicacy in representing the work in its true character.

Multum in parvo may be justly inscribed upon its title, for it is a library of instructions within itself, calculated to impart something useful to every one. The best way to prove this assertion is to buy the book and give it a fair demonstration.

THE COMPILER.

AGRICULTURE.

A GOOD SUBSTITUTE FOR MILK AND CREAM.

BEAT up the whole of a fresh egg in a basin, and then pour boiling tea over it, gradually to prevent its curdling. It is difficult, from the taste, to distinguish it from milk or cream, when used in tea or coffee.

TO PRESERVE EGGS.

APPLY with a brush a solution of gum Arabic to the shells, or immerse the eggs therein, let them dry, and afterwards pack them in dry charcoal dust—This prevents their being affected by any change of temperature.

TO CURE BACON WITHOUT SMOKING.

A GENTLEMAN of science, who has paid attention to many subjects of domestic economy, has favored us with the following receipt for curing bacon—a mode which he assures us he has seen practised recently in England with complete success:

“When the bacon is prepared for smoking, say one hundred weight, use four pounds of

wood soot, in as much water as will cover it; let it lie twelve hours, then hang it up in a dry place; after which it will be fit for use in a few days."

TO PRESERVE GRAIN.

A discovery of considerable importance has been announced, with regard to preserving grain. To preserve rye, and secure it from insects and rats, nothing more is necessary than not to fan it after it is threshed, and to stow it in the granaries mixed with the chaff. In this state it has been kept more than three years, without experiencing the smallest alteration, and even without the necessity of being turned to preserve it from humidity and fermentation.—The experiment has not yet been made with wheat and other kinds of grain, and they may probably be preserved in chaff with equal advantage.

BURNT CLAY

Is an absorbent and acts much like lime as a manure, but not so powerfully. The method of burning it is as follows:—Procure eight loads of clay, cut into spits about as thick as a brick; let it be pretty well dried in the sun. and having made a heap of brush and other wood, coals or other combustibles, and laid one upon another, about as large as a small bonfire, in a pyramidal form, bring the spits of clay and lay them round the same two or three spits thick, leaving only room to put in the fire, and light it. The

clay will soon take fire, and as it advances outwards lay on some more spits of clay, placing them in such a manner that the fire may be pent up within the heap and not suffered to go out. After having burnt up the eight loads of clay, the heat within will be so great as to fire any thing; and then you may lay on the clay green as it is dug from the pit, being always watchful to keep adding to it, but not so fast as to smother the fire. The heap you may enlarge and spread out at the foot, keeping the fire constantly burning night and day; for the larger the heap grows the easier burns the clay. This is a cheap dressing for all sorts of land, excepting perhaps light sandy soils and being laid pretty thick about the roots of fruit trees, enlarges, multiplies and accelerates the growth of fruit.

CABBAGE.

MANURING with ashes and lime has a tendency to preserve cabbages from insects; and to guard against the grub or black worm a little circle of quick lime is said to be of service. Lice on cabbages may be destroyed by washing the plants with strong brine. The under leaves of cabbages, when they begin to decay may be taken off and made food for cattle, but decayed leaves should never be given to milch cows as they give the milk a bad flavour.

Method of preserving Cabbages, so as to have them good in the spring.

MAKE a trench in the driest sandy ground nine inches wide, and of equal depth; in which, place

a row of Cabbages, with the roots upwards, contiguous to each other. Fill the cavities about them with some dry straw, and then shovel the earth up to the stalks on each side, almost as high as the roots, shaped like the roof of a house. The Cabbages will come out in May as sound as when they were put in, and the outer green leaves will be turned quite white. As they are not apt to keep well after they are taken out, two or three at a time may be taken as they are wanted for use, and the breach immediately closed up with straw and earth as before.

ANTS.

WHEN you find ants in quantities near home pour hot water on them. The farmer when he manures his land, if he uses ashes, lime, salt or sand, will not be troubled with those insects. Dr. Rees' Cyclopædia recommends boiling rain water with black soap and sulphur, and saturating the ground with it, which is infested with those insects.

APPLE TREE.

To propagate apple trees sow the pumice from cider mills, digging it into the earth in autumn. The plants will come up in the spring following. The next autumn they should be transplanted from the seed bed into the nursery, in rows from two to three feet apart, and one foot in the rows. The ground for a nursery should not be very rich but mellow and well pul-

verised, and kept clear of weeds. The young trees on being transplanted into orchards should be put into richer land than that to which they have been accustomed.

The best mode of setting out Apple Trees and other Fruit Trees on a light soil.

Dig a hole sufficiently large to prevent the root of the tree when it is to be transplanted from being doubled or placed in an unnatural position, and to give room for the young shoots to extend themselves. Place about the roots of each tree, together with the mould, about half a bushel of small stones, the size of an ordinary apple, or somewhat less, which will give stability to the soil, and prevent the roots from being loosened by the wind.

BARLEY.

To increase a crop of barley dissolve three pounds of copperas in a pail of boiling water. Add to this as much dung puddle water as will cover three or four bushels of barley. Stir it, and let it steep four and twenty hours; when the seed is drained and spread, sift on fine lime which fits it for sowing. Steeping the seed about twenty-four hours in the wash of a dunghill, without any mixture is said to produce a very good effect.

BARN-YARD.

A BARN-YARD should have a high, close and strong fence; be lowest in the middle, and so high on all sides that the greatest rains cannot carry away any of the manure. If not properly shaped by nature it may be done by art, and if the soil be too loose to retain the manure a few loads of clay should be spread over its surface. The cattle should be kept constantly on the barn yard during the fodder season, and for that purpose water should be introduced. There should be several yards where different sorts of cattle are kept. The sheep should have a yard by themselves at least, and the young stock another, that each kind may have their proper sort of food.

BEES.

To preserve bees from worms and butterflies.

ABOUT the first of May, raise the hive up, and strew some fine salt under the edge, which will drive those insects away.

CANDLES.

To purify Tallow for Candles.

TAKE 5-8 of tallow, and 3-8 of mutton suet melt them in a copper chaldron, with it mix 8 ounces of brandy, one of salt of tartar, one of sal ammoniac, two of dry potash. Throw the mixture into the chaldron, make the ingredients

boil a quarter of an hour, then set the whole to cool. Next day the tallow will be found on the surface of the water in a pure cake. Take it out and expose it to the air for some days on canvass. It will become white and almost as hard as wax. The dew is favorable to its bleaching. Make your wicks of fine even cotton; give them a coat of melted wax, then cast your mould candles. They will have the appearance of wax in a degree, and one of them (six to a pound) will burn fourteen hours and not run.

CANKER IN TREES.

SIR Humphrey Davy, in his "Elements of Agricultural Chemistry," attributes canker in trees to an "excess of alkaline and earthy matter in the descending sap;" and says "Perhaps the application of a weak acid to the canker might be of use; or where the tree is great, it may be watered occasionally with a very diluted acid."

REMEDY FOR CATERPILLARS.

THE following method of destroying caterpillars is recommended in the "American Gardener's Calender." "Dissolve a drachm of corrosive sublimate in a gill of gin or other spirits, and when thus dissolved incorporate it with four quarts of soft water. This solution will be found to be the most effectual remedy ever applied to trees, both for the destruction of worms of every species, and of the eggs of insects, deposited in the bark. No danger to the tree is to

be apprehended from its poisonous quality, which as it respects them is perfectly innocent.

Another.

THE following mode of destroying caterpillars has been recommended, and would probably prove effectual.

Take live coals in a chafing dish; throw thereon some pinches of brimstone in powder; place the same under the branches that are loaded with caterpillars. The vapours of sulphur, which is mortal to these insects will not only destroy all that are in the tree, but prevent its being infested by them afterwards. A pound of sulphur will clear as many trees as grow several acres. A chafing dish, or something to contain coals may be fixed on a pole, and put near the nest.

CIDER.

IN making cider see that the mill, the press, and all the materials be sweet and clean and the straw free from must. The fruit should be ripe, but not rotten, and when the apples are ground, if the juice is left in pumice 24 hours, the cider will be richer, softer and higher colored. If the fruit be all of one kind, it is generally thought that the cider will be better; as the fermentation will be more regular. The juice of the fruit, as it comes from the press should be placed in open headed casks or vats: in this situation, it is likely to undergo a proper

fermentation, and the person attending may, with great correctness, ascertain when the first fermentation ceases; this is of great importance, and must be particularly attended to. The fermentation is attended with a hissing noise, bubbles rising to the surface and there forming a soft spongy crust over the liquor. When this crust begins to crack, and a white froth appears in the cracks level with the surface of the head, the fermentation is about stopping. At this time the liquor is in the fine genuine clear state, and must be drawn off immediately into clean casks; and this is the time to fumigate it with sulphur. To do this, take a strip of canvass or rag, about two inches broad and twelve inches long, dip this into melted sulphur, and when a few pails of worked cider are put into the cask, set this match on fire and hold it in the cask till it is consumed, then bung the cask and shake it that the liquor may incorporate with, and retain the fumes; after this, fill the cask and bung it up. This cider should be racked off again the latter part of February, or first of March; and if not as clear as you wish it, put in isinglass, to fine; and stir it well; then put the cask in a cool place where it will not be disturbed, for the finery to settle. Cider, prepared in this manner will keep sweet for years.

Mr. Deane observes "I have found it answer well to do nothing to cider till March, or the beginning of April, except giving a cask a small vent hole, and keeping it open till the first fermentation is over; then draw it off into good casks; and then fine it with skim milk, eggs broke up with the shells, or molasses. A quart

of molasses will give a fine flavour to a barrel of cider, as well as carry all the lees to the bottom. But lest it should incline the liquor to prick I put in at the same time a quart of rum or brandy; and it seldom fails of keeping well to the end of summer. Cellars in which cider is kept should have neither doors nor windows kept open in the summer, and the casks should stand steady and not be shaken to disturb the sediment.

The casks which contains new cider should be filled perfectly full to permit the froth or pummice to discharge itself at the bung. The pressure of the pummice should be slow that the liquor may run the clearer. Some say that if the cider be racked off in a week after it is made, ceasing the moment it becomes muddy; in ten days a second time, and in fifteen days a third time, it will need no other process for fining or purifying it. In every instance the casks should be clean, and perfectly filled, and when filled for the last time should be bunged up close, and placed in a deep, dry cellar, never to be moved till drawn off for use.

The later the apples hang on the trees, the more spirit the cider will contain. In bottling cider it is recommended to raise the proof of the cider by putting in about two tea spoonfuls of French brandy to each bottle, which will check fermentation, and prevent the bursting of the bottles.

COCK-ROACHES.

It is said that a few leaves of elder, strewed on the floor of a room infested with cock-roaches will extirpate those insects.

CURE FOR MUSTY CORN.

IMMERSE it in boiling water, and let it remain till the water becomes cold. The quantity of water should be at least double the quantity of corn to be purified.

CUCUMBER.

TAKE a very tight barrel tub; fill it up to the bung with stones, then a little straw, and earth enough over the straw to fill the barrel. Fill the lower half with water, but instead of letting it steep through the earth, it should be passed through a tube, placed in the earth for that purpose, as often as more water is wanted. The bung should be left out and the water kept as high as the hole by repeated waterings. The plants lying so high will be kept out of the way of insects, nor will they suffer by draught. The plants, however, should once in a while be a little sprinkled with water if the season be very dry.

To preserve Cucumbers and Squashes from bugs and flies.

SPRINKLE the plants with a strong infusion of elder leaves; and that of hops is likewise recommended, Or,

Suspend a diamond formed piece of white paper, shingle. or other piece of wood by a thread, tied to the end of a stick stuck in the ground a small distance from the hill so that the paper will hang directly over the hill, and near the plants. The air by constantly vibra-

ting the paper or shingle will have a tendency to prevent insects from alighting on the plants.
Or,

In the morning when the dew is on, sprinkle the plants with fine dust of slacked lime.

The following recipe was given to us by Mr. S. J. Scott, of Kentucky.

Make a strong solution of hen dung; sprinkle it upon the plants soon after they come up, and repeat it after every rain. This is said to be an effectual remedy for the depredations of bugs as well as to promote vegetation.

TO RENDER CUCUMBERS WHOLESOME.

SLICE cucumbers into a basin of cool spring water, and it will render them not only more crisp and fine but much more wholesome, and prevent their rising in the stomach. The water will completely take away the pernicious juice of the cucumber; which is the principal cause of its disagreeing with the stomach.

BOMBAY METHOD OF DRESSING A FOWL.

THE fowl being trussed, incisions are made in every part, the same as when a fowl is about to be carved, but without severing the joints. The breast is cut as for taking out slices, and the legs scored across. The whole fowl inside and out, is then rubbed well with pepper and salt, and a little Cayenne pepper, so as to be very highly seasoned. After this it is enclosed

in a good thick paste, composed of flour, milk, and butter; one end of which is left open to fill it with water; this being done, it is closed up, put into a cloth, and boiled three or four hours; when it becomes a rich and most relishing dish.

FOWLS.

CORN given to fowls should be crushed and soaked in water; this helps digestion, and hens will lay in winter that are so fed that would not otherwise.

Feed your fowls in winter with bones, pounded fine; and they will need less corn, and will lay as plentifully as at any season of the year. The bones supply the carbonate of lime, which is necessary for the production of the shell, and a part of the yolk of the egg.— Egg shells, oyster shells, chalk or unburnt lime answer a similar purpose.

CURRANTS.

Directions for the culture of the Currant-bush.

THE currant-bush, though a shrub that grows almost spontaneously, requires nevertheless some dressing; in regard to which the following directions may be of service:

Plant them round the quarters of your garden, that they may have the benefit of the dung and culture annually bestowed thereon, which will consequently make the berries large and the juice rich.

The red currant is preferable to the white, as yielding richer juice and in much greater quantity.

Take the most luxuriant slips or shoots of a year's growth, set them in the ground about eight inches deep, and not less than twenty-four distant from each other; these never fail of taking root, and generally begin to bear in about two years. For the rest, let them from time to time be treated as espaliers (but not against a wall) observing to keep the roots, especially in the spring of the year, free from suckers and grass.

CURRENT WINE.

Pick the currants clear from the stalk, put them into an earthen vessel, and pour on a gallon of currants one quart of hot water. Mash them together, and let them stand and ferment; cover them for twelve hours, and then strain them through linen into a cask, add a little yeast and when worked and settled bottle it off. In one week's time it will be fit for use.

Another Receipt.

Gather your currants when full ripe, which will commonly be about the middle of July; break them well in a tub or vat, (some have a mill constructed for the purpose, consisting of a hopper, fixed upon two lignum vitæ rollers) press and measure your juice, add two thirds water, and to each gallon of that mixture (i. e. juice

and water) put three pounds of muscovado sugar (the clearer and drier the better; very coarse sugar, first clarified, will do equally as well) stir it well, till the sugar is quite dissolved, and then turn it up. If you can possibly prevent it, let not your juice stand over night, as it should not ferment before mixture.

Observe that your casks be sweet and clean and such as have had neither beer nor cider in them, and if new, let them first be well seasoned

TO TRANSPLANT SHRUBS IN FULL GROWTH.

DIG a narrow trench round the plant, leaving its roots in the middle in an insulated ball of earth; fill the trench with plaster of Paris, which will become hard in a few minutes, and form a case to the ball and plant, which may be lifted and removed any where at pleasure.

BEANS.

THE following mode of planting beans has been recommended by an English writer. The rows are marked out one foot asunder, and the seed planted in holes two inches apart: the lines are stretched across the lands, which are formed about 6 feet over, so that when one row is planted, the sticks to which the line is fastened, are moved by a regular measurement to the distance required, and the same method pursued till the field is completed. The usual price for this work is 9d. sterling per week, and the allowance two bushels per acre.

Sir John Sinclair in his "*Code of Agriculture*" recommends cutting the tops of beans in order

to accelerate their podding. This eminent writer informs us that "it was begun about the year 1804, and has already been tried on more than 200 acres. The operation is performed by means of a sharp edged instrument or knife, 12 or 14 inches long exclusive of the handle; but it may be done by a sickle or reaping hook. The expense has never exceeded 3s. per acre, and it is done by contract. At a certain stage of its growth the head of the bean stalk does not seem essential to the purpose of vegetation, but by its luxuriance to exhaust the strength of the plant. The proper time to cut them off, is, when the first blossoms begin to drop: if done sooner a fresh shoot will put forth. As soon as the tops are cut off the pods rapidly increase in size, and the period of ripening is accelerated. The timely removal of these parts, where the insects chiefly lodge, materially contributes to the health and vigour of the plant, and probably increases the weight of the crop. The harvest is by this means advanced *at least* a fortnight. In the ordinary mode of managing a bean crop, their tops are green when reaped, consequently they absorb and retain moisture and require a considerable exposure in the field to prepare them for the stack; whereas without their tops, the crop is sooner in a condition to be carried and less risk is incurred from the effects of frost and wet seasons. The tops are left to rot on the ground."

TO PRESERVE MILK FROM SOURING ANY LENGTH OF TIME

The Bulletin of Agricultural Science, gives the process, as discovered by a Russian chemist, of preserving milk for any length of time. It

consists in simply evaporating new milk slowly by a very gentle heat, until it is reduced to a dry powder, which is to be carefully preserved in bottles well corked. When used, the powder is dissolved in water. Milk, thus preserved, does not lose any of its richness or peculiar flavour.

TO RESTORE TAINTED MEAT.

As soon as the meat is found to be tainted, make the following application: Take half a bushel of charcoal, and after taking out the beef and throwing away the offensive pickles, re-pack the beef in the barrel, laying the pieces of charcoal between the pieces of beef, and make a new pickle, and add a little salt petre, cover the cask tight, and in five or six days it will be found as sweet and good as when first put up.

TO RESTORE AND IMPROVE FLOUR.

ONE pound of carbonate of magnesia, is to be well combined with 250 pounds of musty flour; that is in the minor proportion of thirty grains of the carbonate to one of flour. It is to be leavened and baked in the usual way of baking bread. The loaves will be found to rise well in the oven, to be more light and spongy, and also whiter than in the usual way. It will also have an excellent taste and will keep well. The use of magnesia in bread making is well worthy the attention of the public, for if it improve mus-

ty flour, how much must it improve bread in general? The use of magnesia in bread, independent of its improving qualities, is as much superior to that of alum, as one substance can be to another.

TO DESTROY THE BEE MILLER.

THIS troublesome insect is making great ravages among the bees in this vicinity. A subscriber has requested us to state that he had discovered an effectual method of destroying them, which is as follows : To a pint of sweetened water (sweetened with sugar or honey,) add half a gill of vinegar; set this in an open vessel on the top of the hive, and at night, when the miller comes to his work of destruction, he will prefer this composition, and diving into it, will immediately drown. This simple method, our correspondent assures us, is certain success. At all events, it is worthy of attention; and we would recommend to the owners of bees to make a trial of it.

PERFUMES A PREVENTIVE AGAINST MOULDINESS.

DR. M'CULLOCH, of Edinburgh, has published a paper in the Philosophical Transactions of the city, in which he points out that all essential oils possess the property of preventing the growth of mould. His observations are of such general utility, that we copy them for the public benefit.

Ink, paste, leather, and seeds, are among the common articles which suffer from this cause,

and to which the remedy is usually applicable. With respect to articles of food, such as bread, cold meats, or dried fish, it is less easy to apply a remedy, on account of the taste. Cloves, however, and other spices whose flavours are grateful, may sometimes be used for this end; and that they act in consequence of this principle, and not by any particular antiseptic virtue, seems plain, by their preventing equally the growth of those minute cryptogamous plants on ink, and other substances not of an animal nature.

“The effect of cloves in preventing the mouldiness in Ink, is indeed generally known; and it is obtained in the same way by oil of lavender, in a very minute quantity, or by any other of the perfumed oils.

“To preserve Leather in the same manner from this effect, is a matter of great importance, particularly in military store-houses, where the labour employed in cleaning harness and shoes is a cause of considerable expense, and where much injury is occasionally sustained from this cause. The same essential oils answer the purpose, as far as I have had an opportunity of trying effectually. The cheapest, of course, should be selected, and it would be necessary to try oil of turpentine, for this reason. The total interruption of all my pursuits has hitherto prevented me from carrying these trials as far as I intended.

“It is a remarkable confirmation of this circumstance, that Russian leather, which is perfumed

with the tar of the birch tree, is not subject to mouldiness, as must be well known to all who possess books thus bound. They even prevent it from taking place in those books bound in calf near to which they happen to lie. The fact is particularly well known to Russian merchants, as they suffer bales of this article to lie in the London docks in the most careless manner, for a great length of time, knowing well that they can sustain no injury of this nature from dampness, whereas common curried leather requires to be opened, cleansed, and ventilated. Collectors of books will not be sorry to learn, that a few drops of any perfumed oil will insure their libraries from this pest.

“Dr. M. began some experiments with the same agents on wood, to prevent the dry rot, but not having time to carry them on, he recommends the important investigation to others.— With regard to paste, he prefers rosin to alum as a preservative; but lavender, or any other strong perfume, such as pepperment, anise, burgamot, are perfectly effectual for years, however the paste is composed.” That which the Doctor himself employs in labelling, &c. is “made of flour in the usual way, but rather thick, with a proportion of brown sugar, and a small quantity of corrosive sublimate. The use of the sugar is to keep it flexible, so as to prevent its scaling off from smooth surfaces; and that of the corrosive sublimate, independently of preserving it from insects, as an effectual check against its fermentation. This salt, however, does not prevent the formation of mouldiness. But as a drop, or two of the essential oils above mentioned is

a complete security against this, all the causes of destruction are effectually guarded against. Paste made in this manner, and exposed to the air, dries without change to a state resembling horn; so that it may at any time be wetted again and applied to use. When kept in a close covered pot, it may be preserved in a state for use at all times."

He then proceeds—"This principle seems also applicable to the preservation of seeds, particularly in cases where they are sent from distant countries by sea, when it is well known that they perish from this cause.—Dampness, of course, will perform its office at any rate, if moisture is not excluded; yet it is certain that the growth of the vegetables which constitute mould, accelerate the evil, whether by retaining moisture, or by what means, is not very apparent. This in fact, happens equally in the case of dry rot in wood, and indeed in all others where this cause operates. It is a curious illustration of the truth of this view of a remedy, that the aromatic seeds of all kinds are not subject to mould, and that their vicinity prevents it in others with which they are packed; they also produce the same effect daily, even in animal matters, without its being suspected. Not to repeat any thing on the subject of cookery, I need only remark, that it is common to put pepper into collections of insects or birds, without its having been remarked that it had the same power of keeping off mould, as of discouraging or killing the *plinius omnivorous*, or other insects that commit ravages in these cases.

“In concluding these hints, I might add, in illustration of them, that ginger-bread and bread containing carraway seeds is far less liable to mouldiness, than plain bread. It will be a matter worthy of consideration how far flour might be preserved by some project of this kind.

TO MAKE YEAST.

To one gallon of water, add three pints of malt, and one quart of hops, boil to two quarts, and strain the liquor boiling hot, over as much wheaten flour, as will make it of the consistence of thickened milk; and when almost cool, add half a pint of good yeast, when done working put it into a jug or stone pot, with about two quarts of cold water over it, and every time you use it pour off the water, and return fresh, when what yeast is wanted has been taken. It will keep good for two weeks.

The working will be done in two days, and the yeast is then fit for use, and may be put into a jug until wanted.

SUBSTITUTE FOR YEAST.

Mix two quarts of water with wheat flour, to the consistence of thick gruel; boil it gently for half an hour and when almost cold, stir into it half a pound of sugar, and four spoonfuls of good yeast. Put the whole into a large jug or earthen vessel, with a narrow top, and place it before the fire, so that it may by a moderate heat, ferment. The fermentation will throw up a thin liquor, which pour off and throw away;

keep the remainder for use (in a cool place) in a bottle or jug tied over. The same quantity of this as of the other yeast, will suffice to bake or brew with. Four spoonfuls of this yeast will make a fresh quantity as before, and the stock may be always kept up by fermenting the new with the remainder of the former quantity.

TO DESTROY RATS.

A correspondent, who had noticed in a recent number of our journal, a paragraph recommending ground cork, fried in grease, as an efficacious plan for destroying rats, states, that he lately put the plan to the test of experience, and completely succeeded. "The case was that of two old women in the village of Denny, who had lived in two detached garret rooms of the same building. The rats had long been troublesome, but at length had become so numerous and daring, that they fairly threatened to challenge the tenants with no longer possession. The fried cork had only been laid for them three nights, before the whole disappeared. A fact of this kind cannot be made too public, since it may be the means of preventing many of those serious accidents which so frequently occur from the use of poison."

TO FRESH ANY SALT PROVISIONS.

IN my passage on the Chesapeake, I observed my skipper would sometimes slice salted barrel pork, and in a few minutes freshen the slices in a frying pan; and then boil them for his dinner.

The pork slices were put in fresh, cold water, in a frying pan, and held over a fire till the water *began to simmer* (never suffering it to boil in the least.) This water was then thrown away, and other cold fresh water was put in a pot together with the slices of pork. They were then boiled till enough.—This was applied, in my family, to freshening salt fish: especially cod sounds; and it answered admirably. Sometimes they were so over freshed, that it was necessary to eat salt with them.

TO KILL COCK-ROACHES.

AN infallible means to destroy them will be found in giving them the root of the *Veretum Vinæ*, commonly called black hellebore, which grows wild in our country marshy grounds, and may be got of our market people. Strew these roots about the floor at night, and next morning you will find all the family of the cock-roaches dead or dying, from having eaten it, which they will do with much avidity. They will never fail to eat it while they can get it, and will as surely die. It causes them to foam at the mouth and to split in the back occasionally.

TO PREVENT SMUT IN WHEAT.

TAKE of best soft green soap, made from fish-oil, 1 pound, and of scalding water, 4 gallons. Put the soap into a glazed vessel with a small portion of the water; continue stirring it, and add the water as it dissolves, till the whole is a perfect ley. It should be used about 90 degrees

of Fahrenheit's thermometer, or new-milk warm. Put the wheat into a tub, and pour on it a quantity of the liquor sufficient to cover it completely, and throw a blanket over it to preserve the heat. Stir it every ten minutes, and take off the scum. When it has remained in this manner for an hour, drain the liquor from the wheat through a seive, or let the tub be furnished with a drain bottom like a brewing vat. Let the liquor which was drawn off stand a few minutes to subside, and then pour it off the sediment. Repeat the operation till the whole quantity is steeped, only observe to add, each time, as much hot ley as was observed by the former steeping. Dry the wheat with quick lime, and sow as soon as convenient. It will keep ten days after steeping; but should be spread thin on a dry floor.

Three pounds of soap, and 12 gallons of water, will steep half a ball of wheat. If a tub with a drain bottom is used, such as a hogshead, with a spigot to draw off the ley, 4 ounces of soap, and 1 gallon of water scalding hot, will preserve a stock of warm ley sufficient for any quantity of wheat; and, allowing 5 minutes for draining, five balls may be done in 11 hours. The operation should be performed in a clean place, at a distance from barns and granaries, the roofs of which may be observed hanging full of smut.—The refuse of smutted wheat should be buried deep in the earth, and not thrown to the dung-hill, from which it would be conveyed to the field.

TO PRODUCE EARLY POTATOES IN GREAT QUANTITY.

EARLY potatoes may be produced in great quantity by resetting the plants, after taking off

the ripe and large ones. A gentleman at Dumfries, has re-planted them six different times in one season, without any additional manure; and instead of falling off in quantity, he gets a larger crop of ripe ones at every raising, than the former ones. His plants have still on them three distinct crops, and he supposes they may still continue to vegetate and germinate until they are stopped by the frost. By this means he has a new crop every eight days, and has had so for a length of time.

TO DESTROY THE FLY ON TURNIPS.

Lime sown by the hand, or distributed by a machine, is an infallible protection to turnips against the ravages of the fly. It should be applied as soon as the turnips come up, and in the same daily rotation in which they were sown. The lime should be slacked immediately before it is used; if the air be not sufficiently moist to render that operation unnecessary.

TO PRESERVE GRAIN FROM VERMIN.

To preserve rye, and secure it from insects and rats, nothing more is necessary than not to winnow it after it is threshed, and to stow it in the granaries mixed with the chaff. In this state it has been kept for more than three years without experiencing the smallest alteration, and even without the necessity of being turned, to preserve it from humidity and fermentation. Rats and mice may be prevented from entering

the barn, by putting some wild vine or hedge plants upon the heaps: the smell of this wood is so offensive to these animals that they will not approach it.

TO PREVENT THE DESTRUCTION OF CORN BY INSECTS.

IN laying the floors of a granary, let Italian poplar be made use of for the timber. Many experiments show that granaries, after laying down this flooring, will no longer be infested with weevils, &c.

TO DESTROY SLUGS ON LAND.

PROCURE some fresh lime, and after throwing as much water upon it as will reduce it to a powder, sow the lime in hot state upon the land that is overrun with vermin, at the rate of about 12 bushels to the acre. The lime should be sown towards the wind, and falling upon them in a fermented state, it will instantly kill them.

DAMAGED HAY.

IN the year 1790, which, like the present year, was remarkable for the quantity of rain, which fell during the hay season, the farmers suffered great loss from the thousands of heads of cattle which perished from eating damp hay. This fact ought to put farmers on the guard against any similar effects at the present time. The efficacy of salt in curing hay is now almost universally known; but the best advice, perhaps, which can be given, is to be careful as to the quantity which is given.

YEAST.

THE following methods of making yeast have been recommended:

1st. Boil one pound of good flour, a quarter of a pound of brown sugar, and a little salt, in two gallons of water for one hour; when milk warm, bottle it and cork it close; it will be fit for use in twenty-four hours. One pint of this will make 18 pounds of bread.

2nd. To a pound of mashed potatoes, (mealy ones are best) add two ounces of brown sugar, and two spoonfuls of common yeast; the potatoes first to be pulped through a cullender, and mixed with warm water to proper consistence. Thus a pound of potatoes will make a pound of good yeast. Keep it moderately warm while fomenting. This recipe is in substance, from Dr. Hunter, who observes that yeast so made will keep well. No sugar is used by bakers when adding the pulp of potatoes to their rising.

REMEDY AGAINST BAD WATER.

A highly respectable gentleman in Connecticut, who used to visit Ohio yearly, gave me the following prescription. Being from early life a water drinker, he applied to the late Dr Osborn, of Middletown, to give him a substitute. The doctor told him to furnish himself with a mixture, of equal proportions, of pulverised sugar and ginger, and whenever he drank the bad water of the west, to put in as much of the composition as suited his taste, and he need never apprehend bad effects from a free use of the water.

He tried it a great number of years, and always found it an effectual preventive. At a time when the quality of the water, in the lower part of the city is made, by so many, an apology for the commencement of insidious and dangerous habits of mingling poison in their beverage, the adoption of this simple and self-preventive cannot be too earnestly recommended.

TO REMOVE THE TASTE OF TURNIPS FROM MILK OR BUTTER.

THE taste of the turnip is easily taken off milk and butter, by dissolving a little nitre in spring water, which being kept in a bottle, and a small tea-cup full put into eight gallons of milk, when warm from the cow, entirely removes any taste or flavor of the turnip.

TO PRESERVE POTATOES FROM THE FROST.

IF you have not a convenient store-place for them, dig a trench three or four feet deep, into which they are to be laid as they are taken up and then covered with the earth taken out of the trench, raised up in the middle like the roof of a house, and covered with straw, to carry off the rain. They will thus be preserved from the frost, and can be taken up as they are wanted.

Easy method of preserving animal food sweet for several days in the height of summer.

VEAL, mutton, beef, or venison, may be kept for nine or ten days perfectly sweet and good, in the heat of summer, by lightly covering the

same with bran, and hanging it in a high, windy room; therefore, a cupboard full of small holes, or a wire safe, so as the wind may have a passage through, is recommended to be placed in such a room, to keep away the flies.

TO SWEETEN MEAT, FISH, &c. THAT IS TAINTED.

WHEN meat, fish, &c. from intense heat, or long keeping, are likely to pass into a state of corruption, a simple and pure mode of keeping them sound and healthful is, by putting a few pieces of charcoal, each the size of an egg, into the pot or saucepan, wherein the fish or flesh are to be boiled. Among others, an experiment of this kind was tried upon a turbot, which appeared too far gone to be eatable: the cook, as advised, put three or four pieces of charcoal, each the size of an egg, under the strainer, in the fish kettle; after boiling the proper time, the turbot came to table perfectly sweet and firm.

HOUSE-FLIES.

THESE troublesome little insects, may be effectually destroyed without the use of poison.—Take half a spoonful of black pepper in powder, one tea-spoonful of brown sugar, and one table spoonful of cream; mix them well together, and place them in the room on a plate, where the flies are troublesome, and they will soon disappear.

TO KILL COCK-ROACHES.

Procure from the herb woman or apothecary, a moderate quantity of that ordiferous vegetable called *poke root*: Boil it in water until the juices are extracted, and mingle the liquor with good West India molasses, or if the spirit of patriotism be extravagant, with molasses from New Orleans; spread the liquid in large platters or soup plates, in the kitchen, pantry, closet, or watch house, or whatever apartment may have been the subject of invasion, and the enemy will be found slain in heaps, lying by hundreds, and fifties, before the following morning. A gentleman, to whom we are indebted for this information, states that he slaughtered 575 cock-roaches in a single night, by means of the *poke root* and *molasses*, and that the root which had been boiled being thrown into a closet, thickly infested by the enemy, the place was quitted entirely in a few days, great numbers being left dead upon the field.

PRESERVATION OF SEEDS

M. D'ARCEY has preserved corn, which had been infested by weevils, for a considerable time by putting it into vessels, previously filled with sulphurous acid. All the weevils perished, and the corn ceased to suffer. In this manner insects in seeds may not only be destroyed, but their presence prevented. As it might be inconvenient to burn sulphur in the vessels to be filled with sulphurous acid, we will indicate another method of replacing the acid, and obtain-

ing the same results. All that is necessary is, to powder the seeds well with flour of sulphur, before they are put into the bottles or other vessels; or after having put the seeds into a bottle the sulphur may be added, and the whole well shaken together, so as to bring it in contact with all the seeds. The presence of the sulphur will prevent entirely the attacks of the insects.

SIMPLE METHOD OF DESTROYING THE HESSIAN FLY.

THE Hessian Fly deposits its eggs on the wheat ear before it is reaped; the egg is so small as to be invisible to the naked eye, but may be distinctly seen with a microscope; sometimes one grain of wheat will be observed to have several of these eggs on it. They are attached to the wheat by a glutinous substance, deposited around them by the parent fly, by which they are held so firmly on the surface, as not to be easily removed by the motion of reaping, threshing, &c. Shortly after the seeds begin to germinate in the soil, the genial heat of the season brings the young fly from its egg in the form of a very small maggot (as is the case with all insects;) these little maggots deposit themselves at the root of the stalk to the seed of which the eggs had been attached; between the stem and the lowest blade or leaf, where they may be discovered during the month of May and beginning of June quietly reposing: here they remain until the warmth of the season brings them to maturity, when they commence eating the substance to which they have attached. It is not

until this period that their destructive effects are visible, by the wheat becoming withered and blighted. This accounts for the fact that wheat, which is attacked by these destructive insects, presents a healthy appearance in the month of June, the period at which the embryo-fly begins to use food.

Now it is evident that if the eggs of this fly can be destroyed on the seed wheat, by any process that will not also destroy the vegetable quality of the grain, the ruinous effects will be avoided.—This can be done by the following very simple process. “Soak the seed wheat in water for twelve hours; spread it out on the barn floor, so as to allow the superabundant water to escape: then take fresh slacked lime and mix it among the wheat in quantity sufficient to have every grain covered with the lime, taking care to stir the wheat well with a shovel, so that no particle may escape coming in full contact with the lime, which, when thus applied, will in a short time destroy the eggs, and consequently preserve the grain from destruction.”

Our correspondent assures us that the egg, which before the application of the lime appears clear and transparent, afterwards becomes opaque, and puts on the appearance of an addled egg. The efficacy of the above remedy has been established by several experiments, one of which we here relate. Wheat supposed to be infested by the Hessian fly, was taken, one half of the quantity treated with lime, and the other half was sown in the same soil with the prepared, in alternate drills; the result was that every stalk from the prepared seed came to maturity

and was productive, whilst the alternate drills which had been sown with unprepared seed, were almost totally destroyed.

The above remedy for so serious an evil cannot be too widely circulated—we would recommend its translation into the French papers, and we think the Curates of the country parishes, would confer a benefit on the parishioners, by having it made known at their respective church doors, after divine service.

TO KEEP BEEF.

A country housekeeper, to whom a sirloin or a steak is not an every-day treat, has been taught, by necessity, *how to keep beef*; an art unknown in towns, where daily access can be had to markets; but it is a most valuable secret, equal to that of *keeping venison*, so highly prized by the quins and aldermen of England; and I here propose, without the prospect of any other reward than the hope of an honest fame, to communicate it to the American public.

Beef is never fit to be eaten in steaks until a week after being killed. If a piece of beef is suspended by a hook and string in a dry cellar, so as not to touch the wall, it will, in our hot climate, in the hottest season of summer, keep from one to two weeks without a particle of salt; and in winter it will keep from eight to ten weeks. I have this winter kept it two months, with a constant and great improvement to the last, and have no doubt I might, with increasing benefit, have kept it for a month longer. No one, without the proof, can believe how astonishingly it will improve in tenderness and flavor

after being kept a due length of time; and it doubtless is much more wholesome than the recent, rank, tough beef, that is laboriously masticated to become a cause of dyspepsia in some and bilious fevers in others, as the town doctors assure us. I beg to recommend this keeping of beef to all house-keepers in town and country, satisfied that after one fair trial, they would no more feed on a recently slaughtered ox than they would on an Abyssinian steak with Caffrarian garnishments. But they must not forget the excellent condiment, for which a recipe may be found in vol. ix. page 191 of the *American Farmer*, under the name of "*Tomato ketchup*," now better known, by way of eminence, as "*Cousin Tabb's ketchup*," an appellation by which it will probably be as celebrated in future ages, as will the grand discovery which is here made known, of keeping beef—associating in fame and honor the two names of James Quin—(the venison epicure,) and

COUSIN TABITHA.

P. S. Freezing meat (a practice not advised) preserves it in one state without much improvement.

TO MAKE OLD FEATHERS BETTER THAN NEW.

If the feathers of old beds have become dirty, matted, or have lost their elasticity, by age or use, they should be emptied into a hogshead and washed in warm soap suds, agitated by means of a rake or garden hoe, and afterwards rinsed in clear water. They are then to be pressed dry by the hand, and put upon the floor of an empty well lighted room, and now and then

whipped and stirred up; and when thoroughly dry put again into ticks. They will be found after this *better than new feathers*; because deprived of the oil which abounds in the latter.

TO DESTROY WEEDS.

If you have not had time to root out all the weeds on your premises, you will at least endeavor to prevent their going to seed by cutting off the tops with a scythe or sickle, and it will be good economy to lodge the proceeds of your cuttings in your barn, barn yard, or compost bed. An antidote to the increase of weeds may be found in burning the stubble as it stands after reaping. On land that is designed to be sown the next year, this is more especially good husbandry; for it will destroy so many of the seeds of weeds, as to prevent the ensuing crop from being so weedy as it might otherwise be. At the same time this process will destroy many insects, clean the ground, and render it fit for the operations of tillage, besides fertilizing the soil by the ashes of the stubble.

HOW TO BE RICH.

The way to *get credit* is to *be punctual*. The way to *preserve it*, is, *not to use it much*.
Settle often. Have short accounts.

Trust no man upon appearances—they are deceptive—perhaps assumed for the purpose of obtaining credit. Beware of a guady exterior. Rogues usually dress well. The rich are plain

men. Trust him, if any one, who carries little upon his back. Never trust him who flies into a passion on being dunned; make him pay quickly if there be any virtue in the law.

Beware of him who is an office seeker; men do not usually want office when they have any thing to do. A man's affairs are rather low when he seeks office for support. Trust no stranger; your goods are better than doubtful charges.—What is character worth, if you make it cheap by crediting all alike? Agree before hand with every man about to do a job; and if large, put it in writing; if either decline this, quit it or be cheated. Though you want a job ever so much make all sure at the outset; and in a case at all doubtful, insist on a guarantee. Be not afraid to ask it—the best test of responsibility; for if offence be taken, you have escaped a loss. If he be in fact responsible, he will like you the better, for he thus knows that he is dealing with a man who looks at the end of things, and may expect to be well served. If not, he will be provoked, and discharge you instantly. Thus you have it in your power always to protect yourself in any doubtful case, by simply insisting on security. “Once well begun is twice done.”

NO, is a very useful word—be not afraid to use it. Many a man has pined in misery for years by not having courage to pronounce that little monosyllable.

Work for a man that is punctual at less wages than for him who is not; you get the balance in certainty of payment. One dollar sure, is better than two doubtful, and will avail more

upon a shift. If you cannot get full wages, take less—better so than be idle. Shun idleness as a disease. A shilling a day is better than nothing. The very fact of being at work will procure employ, by and by, at a fair rate. Men avoid him who is all the time strolling about the streets—he is judged unfit for any thing, and may die for want of employ.

If you can find nothing else to do, read and improve your mind, and fit yourself for better doing what you may have to do. Instruct your children—see that they have good schools; go to school with them occasionally, and take a glance at the method in which it is conducted. Do you think they will ever respect you, or be worth having, if you neglect them in their youth, when the mind first takes its bent and inclinations? No man who has a family ever should say that he has nothing to do.

Job about your house, or in your garden. *If you have no garden, hire a picce of ground, and make one; till it as well as you can; at any rate there raise your family vegetables.* The poor man, as well as the rich, feels the benefit of a garden. If he cannot get work every day abroad, he may have it there. Besides, you may often find an odd hour or half-hour, during regular employ, when you can labor in it profitably; and you may in such case, rise an hour earlier in the morning, and hoe your garden, and thus almost subsist your family, instead of taking a part of your day's wages for marketing.—The market is a canker, that will, by degrees, eat you out, while you are eating upon it.

A good garden, with a little salted provisions, will support your household a whole summer: you need little or no fresh meat during that season, better without it. Buy a few bushels of wheat, and get it ground at the custom mills—much cheaper than to purchase flour by the barrel, and more wholesome by not being run too fine, and here is a great saving. You may have a cow grazing on the common in the proper season, and hay costs but a trifle—see to all this.

Doctor Franklin once lived well upon about fifty dollars a year, including all expenses. One may, in this country, carry himself well through with less money. If you have a roof a little out, your wood will cost you nothing but the trouble of picking it up, and the thanks of the owner for taking it away. Many a laborer has, from the balance of his earnings, above the support of a large family, become the proprietor of a decent house and piece of land, in the course of five years, and been all the time free from debt.

Stroll not about begging patronage. What is patronage?

Nothing, after your ability is known. Then, if you are fit for employ, you will have it—if not a better man should. You must stand competition; this is the life of business; get work by superior skill, punctuality, and attention. Men know their own interest, and will follow it in spite of friendship. Give me the skill, and you may have all the patrons. They will stick to you as long as you serve them best—no longer. If too many are in the business, let the balance clear out; and they will soon do so if the public do not falsely cherish them with fair words.

of patronage, which means nothing—but “every man for himself.”

Recollect, the main point is employ, and not fair words. One man giving a job, is worth forty promising it. Promises are the ruin of many, and usually impart nothing but a vitality to hope. Many a man promises from mere good nature, and will wantonly promise the same thing to a hundred in a day—and disappoint ninety-nine—I say, once more, emphatically, trust not to promise, until men become a little more honest; and thus, by doubting their veracity, put them upon good behavior. And doubt every man who has not strictly complied with all his engagements. If he has disappointed others, may he not disappoint you? What reason have you to think otherwise? In fine, never think you have money at command until it is actually in your hand; and therefore take care how you promise it. Neglect of such prudentials hinder men from becoming rich, and produces

HARD TIMES.

TO PRESERVE VINES FROM BUGS, &c.

SULPHATE of Soda, (Glauber Salts) an ounce dissolved in about one quart of water and sprinkled upon the plants or vines, is recommended as a preventive against destructive insects.

GARDENING.

"GARDENING is both a science and an art. It embraces the knowledge and use of all the elements of the vegetable kingdom, that serve, or may serve the wants, as well as the pleasures of mankind."

Hence a good garden is very essential to every farmer. It is conducive to health, comfort and profit.

In passing through the country, every man's garden furnishes a clue to character, much better and safer, in our estimation, to trust to, than either physiognomy or phrenology. Do we see the kail bed, of large and ample dimensions, encroaching upon every inch of cultivated soil, we pronounce the possessor to be a political economist, or radical, or voluptuary. On the other hand, if we witness flowers of all hues, adorning the vicinity of his habitation, we know there is a spark of his better nature yet unextinguished. It unfolds to us, the current of his thoughts and feelings; it tells, like the other, also, of honesty and industry; but it tells besides,

of generosity, charity, love and fidelity, of brave sons and beautiful daughters.

TO CHOOSE THE SOIL FOR A KITCHEN GARDEN.

It is found that a light sandy loam is the best soil for a kitchen garden. This may be formed where the predominant soil is either clay, peat, or sand. A free marl is likewise well calculated for garden culture. The addition of a moderate quantity of clay with the oxide of iron, is of much use in promoting fertility.

It is fortunate, however, when a garden contains a variety of soils; as some vegetables require a dry, others a wet earth; some thrive best in a strong heavy soil, and others in a light sandy one, and we cannot point out any one species of land that will suit all vegetables, therefore the soil most congenial to the different plants, will be described under their respective heads hereafter.

PREPARATION OF THE SOIL.

PREPARING the soil and trenching it to a proper depth, is not always sufficiently attended to in gardening. The soil ought to be from one foot and a half to two feet and a half deep, particularly where tap-rooted vegetables are cultivated. The roots can thus with greater facility extend their fibres in all directions, in search of vegetable nourishment, and a reservoir is provided for any superabundant moisture which may be occasioned by heavy rains, where it is

retained till it is wanted. Where the ground is wet draining is indispensable.

Soils may be rendered more fit for answering the purposes of vegetation (especially in gardening) by pulverization; by consolidation; by exposure to the atmosphere; by alteration of their constituent parts; by changing their condition in respect to water; and by a change in the kinds of plants cultivated. All these improvements are independent of the application of manure.

TO PREPARE HOT-BEDS, MANURES, AND COMPOSTS.

STABLE dung is in the most general use for forming hot beds, which are masses of this dung after it has undergone its violent fermentation.

Bark is only preferable to dung, because the substance which undergoes the process of putrid fermentation, requires longer time to decay; hence it is found useful in the bark pits of hot houses as requiring less frequent removals or renewals than dung or any other substance.—

Leaves, and generally oak leaves, come the nearest to the bark, and have the additional advantage that when perfectly rotten, like dung, they form a rich mould of excellent manure.

The object of preparation in these three substances is to get rid of the violent heat which is produced when the fermentation is most powerful. It is obvious, that preparation must consist in facilitating the process; for this purpose a certain degree of moisture and air in the fermenting bodies are requisite, and here the business of the gardener, is to turn them over fre-

quently, and apply water when the process appears impeded, and exclude rain when chilled with too much water. Recent stable dung generally requires to lie a month in ridges or beds, and turned over in that time thrice, before it is fit for cucumber beds of the common construction. But for the phials, hot beds, or for linings, or for frames, with moveable bottoms, three weeks, a fortnight, or less will suffice; or no time at all need be given, but the dung formed at once into lining. Tan and leaves require, in general, a month. Fermentation is always most rapid in summer, and if the materials are spread abroad during frost, it is totally impeded. In winter the process generally goes on under the back sheds, which situation is always the best in summer, as full exposure to the sun and wind, dries too much the exterior surface; but when sheds are not convenient, it will go on very well in the open air.

TO FORM DUNG BEDS.

ASHES are often mixed with the dung of hot beds, and are supposed to promote the steadiness and duration of their heat, and at least to revive it if somewhat decayed. The heat of dung beds is revived by linings, or collateral or surrounding walls or banks of such dung. In winter, or severe weather, the sides of the bed are often protected by bands of straw or faggots.

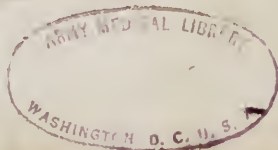
TO MAKE COMPOSTS FOR PLANTS.

THESE may be reduced to light sandy loam from old pastures. Strong loam approaching near-

ty to brick earth, from the same source. Peat earth from the surface of heaths or commons: Bog earth, from bogs or morasses. Vegetable earth, from the decayed leaves, stalks, cow dung, &c. Sand earth, sea sand, drift sand, or powdered stone, so as to be as free as possible from iron, lime, rubbish, and, lastly, common garden earth; there are no known plants that will not grow or thrive in one or other of these earths, alone, or mixed with some other earth, or with rotten dung, or leaves. Nurserymen have seldom more than three sorts of earth, loam, peat, or bog earth, and the common soil of their nursery; with these and the addition of a little sand, for striking plants, some sifted lime rubbish for succulents, and some well rotted cow dung for bulbs, and some sorts of trees, they continue to grow thousands of different species in as great, or greater, perfection, as in their native country.

TO PREVENT BUGS IN PEAS.

IMMEDIATELY before planting, put the peas in a tub, and pour very hot water upon them, keep stirring for one or two minutes, and have cold water at hand to pour on, sufficient to cover them one or two inches—leaving it more than blood warm for one or two hours before planting, in which time they will swell considerably, and come up much sooner: all the bugs will be destroyed and found floating on the top of the water. In fact, I have very few, and verily believe, if the plan were universally adopted, we should hear no more about buggy peas, but



if here and there a slovenly neighbor should neglect this rule, the flying weevil would pass from his field to those of his careful neighbors, as ready as the miller from the neglected apple and cherry trees, to the better attended ones of his neighbors, and deposite the eggs of the caterpillar for the next year.

TO GERMINATE SEEDS.

GERMINATION is that act or operation of the vegetative principle by which the embryo is extricated from its envelopes, and converted into a plant. This is universally the first part of the process of vegetation. For it may be regarded as an indubitable fact, that all plants spring originally from seed. The conditions necessary to germination relate either to the internal state of the seed itself, or to the circumstances in which it is placed with regard to surrounding substances.

The first condition necessary to germinate is, that the seed must have reached maturity. Unripe seeds seldom germinate because their parts are not prepared to form their chemical combinations on which germination depends. There are some seeds, however, whose germination is said to commence, in the very seed-vessel, even before the fruit is ripe, and while it is yet attached to the parent plant, and it is necessary to sow some as soon as they are ripe. But most seeds if guarded from external injury will retain their germinating faculty for a period of many years.

The second condition is, the seeds sown must be defended from the action of the rays of light. This has no doubt been long known to be a necessary condition of germination, if we regard the practice of the harrowing or raking in of the grains or seeds sown, as being founded upon it.

A third condition necessary to germinate on is, the access of heat. No seed has ever been known to germinate at or below the freezing point. Hence seeds do not germinate in winter even though lodged in their proper soil. But the vital principle is not necessarily destroyed in consequence of this exposure; for the seed will germinate still, on the return of spring, when the ground has been again thawed, and the temperature raised to a proper degree. But this degree varies considerably in different species of seeds, which is obvious, by observing their times of germinating whether in the same or in different climates; for if seeds which naturally sow themselves germinate in different climates at the same periods, the temperature necessary to their germination must of course be different. Adamson found that seeds which will germinate in the space of twelve hours in an ordinary degree of heat may be made to germinate in the space of three hours by exposing them to a greater degree of heat; and that seeds transported from the climate of Paris to that of Senegal have their periods of germinating accelerated from one to three days. We know by our own experience that seeds raised in the northern States will germinate in this climate much sooner than those raised here. Upon the same

principle seeds transported from a warmer to a colder climate have their time of germinating protracted till the temperature of the latter is raised to that of the former. This is well exemplified in the case of the green house and hot house plants, from which it is also obvious that the temperature must not be raised beyond a certain degree, otherwise the vital principle is totally destroyed.

A fourth condition necessary to germinate, is the access of moisture. Seeds will not germinate if kept perfectly dry. Hence rain is always acceptable to the farmer or gardener immediately after he has sown his seeds, for if no rain falls recourse must be had to artificial watering. But the quantity of water applied is not a matter of indifference; there may be too little or too much; if there is too little, the seed dies for want of nurture; if there is too much it rots. There are some seeds, such as the aquatics, which must germinate under water.

A fifth condition necessary to germination is the access of atmospheric air. Ray introduced some grains of lettuce seed into the receiver of an air pump which he then exhausted: the seeds did not germinate; but they did so upon the re-admission of the air which is thus proved by consequence, to be necessary to their germination.

The period necessary to complete the process is not the same in all seeds even when all the necessary conditions have been furnished. Some species require a shorter, and others a longer, period. The grasses are among those plants whose seeds are of the most rapid germination;

then perhaps cruciform plants ; then leguminous plants ; then labiate ; then umbelliferous plants ; and in the last order rosaceous plants, whose seeds are the slowest to germinate.

The following table indicates the periods of the germination of some of the most common seeds :

	Days.		Days.
Wheat	1	Barley	7
Millet seed	1	Purslain	9
Spinnage	3	Cabbage	10
Beans	3	Hyssop	30
Mustard	3	Parsley	40 a 50
Melon	5	Chesnut	1 year
Cucumber	5	Rose & Hawthorn	2
			years.
Radish	6		
Beet Root	6		

RAISING PEAS IN FRANCE.

The market gardeners place their rows east and west and raise a little ridge of earth on the north side of the row, which protects them from the north winds, and receives, at a more powerful angle, the sun's rays ; by which more heat is reflected on the plants in the day-time and at the same time more absorbed, to be radiated on them at night. When the plants show their second blossoms, the top is pinched off, which throws the force of vegetation upon their forming pods, hastens the maturity of the crop, and increases the size of the peas. The operation is

called CHARTER. The crop is generally removed by the end of May, after which, mangle wurtzel is frequently sown; but sometimes rows of potatoes are planted between the rows of peas.

SHORT DIRECTIONS FOR TRANSPLANTING.

Food is as necessary to the health and growth of plants, as it is to animals. The best food for plants is rich, pulverised earth, or rather the vegetable matter which it contains. That your trees and shrubs may live and thrive, proceed as follows: Dig for your trees holes at least three feet in diameter, and eighteen inches deep, and for shrubs a proportionate size and depth, throwing away the lower spit of earth. Then fill up the hole to a proper height for setting the tree, with rich surface earth, or perfectly rotted manure, blended with four out of five parts of earth. Set your tree, and cover with surface soil, treading down when the roots are covered with earth. See that the roots are trimmed of all bruised and broken parts; that they are separately extended in their natural direction; that fine earth every where comes in contact with them. A potato or two, or a gill of flaxseed or oats, may be advantageously placed in the hole before the tree is set, and a pail of water turned in after the hole is two-thirds filled. The rich earth affords nutritive pasture for the young roots to range in; the potatoes, &c. keep the ground loose and moist, and enable them to roam freely; and the water brings the earth in contact with the roots, and prevents them from becoming mouldy. Keep the ground free of

grass as far as the roots extend; for these exhaust the moisture and nutriment necessary to the plant, and exclude from the roots air and heat, the indispensable agents to vigorous growth. Treat your trees as you would favorite corn hills which you wish to make the most of, except give them no unrotted dung. Washing with a strong ley in May will destroy insects, and promote the health and vigor of your trees.

To persons living remote, or who are unable to obtain their trees for *early* spring planting, we recommend that they procure them in the autumn, and *lay them in by the heel*, as nursery-men technically term it; which is merely to dig a trench on a dry piece of ground, laying the earth on one side—the trench wide enough to contain the roots; put the roots into this, close together, letting the stocks rest in an inclined position upon the bank of earth, and then cover the roots and a part of the stocks with earth. In this way they escape injury from the frosts of winter, and are in readiness for early planting in the spring. Besides, better plants are generally obtained in the autumn than in the spring, after nurseries have been culled.

TO INCREASE THE NUMBER AND IMPROVE THE QUALITY
OF PLANTS.

To accomplish this, it is necessary to facilitate their mode of nutrition, by removing all obstacles to the progress of the plant. These obstacles may either exist under or above the surface; and hence the origin of draining, clearing from the surface, incumbrances, and the

various operations, as digging, ploughing, &c. for pulverising the soil. It is necessary, or at least advantageous to supply food artificially; and hence the origin and benefit of manuring. All organised matters are capable of being converted into the food of plants; but the best manure for ameliorating the quality, and yet retaining the peculiar chemical properties of plants, must necessarily be decayed plants of their own species.

It is true that plants do not differ greatly in their primary principles, and that a supply of any description of putrescent manure will cause all plants to thrive; but some plants, such as wheat and rye, contain peculiar substances (as gluten and phosphate of lime) and some manures as those of animals or decayed wheat and rye, containing the same substances, must necessarily be a better food or manure for such plants. *The regulation of moisture* demands attention; for when the soil is pulverised, it is more easily dried by the penetration of the air; where an increase of food is supplied, the medium through which that food is taken up by the plant should be increased; and when the temperature is increased, evaporation becomes greater.

Hence the advantage of watering by surface or subterraneous irrigation, manual supplies to the root showering over the leaves, steaming the surrounding atmosphere, &c.

TO INCREASE THE MAGNITUDE OF VEGETABLES,

WITHOUT reference to their quality, is to be obtained by an increased supply of all the ingredients of food, distributed in such a body of well

pulverised soil as the roots can reach to, of heat and moisture, of a partial exclusion of the direct rays of the sun, so as to moderate perspiration, and of wind so as to prevent sudden desiccation.

To increase the number, improve the quality, and increase the magnitude of particular parts of vegetables.

It is necessary in this case, to remove such parts of the vegetable as are not wanted, as the blooms of bulbous or tuberous rooted plants, when the bulbs are to be increased, and the contrary. Hence the important operations of pruning, ringing, cutting off large roots, &c. It may be said that this is not nature, but art; Man though an improving animal is still in a state of nature, and all his practices in every stage of civilization are as natural to him, as those of the other animals are to them.

To form new varieties of vegetables, as well as of flowers and useful plants of every description, it is necessary to take advantage of their sexual differences, and to operate in a manner analogous to crossing the breed of animals.—Hence the origin of new sorts of fruits, grains, and roots. New varieties or rather sub-varieties are formed by altering the habits of plants by dwarfing through want of nourishment, variegating by arencious soils, &c.

TO PROPAGATE AND PRESERVE PLANTS FROM DEGENERACY.

IN doing this, we should have recourse to the different modes of propagating by extension. Thus choice apples and tree fruits could not be

perpetuated by sowing their seed, which experience has shown, would produce progeny more or less different from the parent, but they are preserved and multiplied by grafting; others such as the pine apple, by cuttings or suckers; choice carnations by layers; potatoes by cuttings of the tubers, &c. But approved varieties of animals are in general, multiplied and preserved by selecting seeds from the finest specimens and paying suitable attention to their culture.

TO PRESERVE VEGETABLES FOR FUTURE USE.

THIS is effected by destroying or rendering dormant the principle of life, and by warding off as far as practicable the progress of chemical decomposition. Where vegetables or fruits are gathered for use or preservation, the air of the atmosphere which surrounds them is continually depriving them of carbon and forming the carbonic acid gas.

The water they contain, by its softening qualities, weakens the affinity of their elements and best produces the same effect, by dilating their parts promoting the decomposing effect both of air and water.

Hence, drying in the sun or in ovens, is one of the most obvious modes of preserving vegetables for use as food, or for other purposes, but not for growth if the drying process is carried so far as to destroy the principle of life in the seeds, roots, or sections of the shoots of ligneous plants! Potatoes, turnips, and other esculent roots may be preserved from autumn till the following summer, by drying them in the sun, and burying them

in perfectly dry soil, which shall be at the same time at a temperature but a few degrees above the freezing point. Corn may be preserved for many years, by first thoroughly drying it in the sun, and then burying it in dry cool pits, and closing them so as to exclude the atmospheric air. The corn is thus preserved from decomposition, from insects, or vegetation. The Romans preserved their corn in this way for many years in chambers hewn out of dry rock.

FRUIT TREES. HOW FORCED TO BEAR.

WITH a sharp knife cut the bark of the branch which you mean to force to bear, not far from the place where it is connected with the stem; or if a small branch or shoot, near where it is joined with the larger bough; the cut is to be made round the branch so as to encircle it, and penetrate to the wood. A quarter of an inch from the first cut, make a second cut like the first so that by both encircling the branch, you have marked a ring upon the branch a quarter of an inch broad between the two cuts—then with a knife separate the bark from the wood, removing even the fine inner bark which lies immediately upon the wood, so that no connexion whatever remains between the two parts of the bark, leaving the wood naked, white and smooth.

This operation must be performed when the buds are strongly swelling, or breaking out into blossoms; the same year a callous is formed on at each edge of the ring, and the bark is again restored without detriment to the tree or the branch operated upon.

This operation seems calculated to force those trees to bear, which put out a proportion of blossoms, and yet bear no fruit; or if they bear the fruit often drops from the tree before ripe. The fruit from trees so operated upon will be larger, more fair, and ripe several weeks earlier than the other fruit upon the same tree. It is well known to botanists that the sap ascends in the wood, but descends by the bark: and the above operation prevents its return.

GRAPE VINES. TO CHECK BLEEDING.

A potatoe placed upon the ends of such vines, as have been cut, will effectually check their bleeding.

NEW MODE OF GRAFTING.

WHEN trees begin to show their fruit, (no matter what kind,) and it is evident that grafting must be resorted to, or we must patiently put up with an inferior kind; instead of cutting off the top, uncover the roots, and choosing the most thrifty one, make a slit in the bark, cut your scion off with a slope, and thrust it in and cover the roots with earth. It will take well, and grow some the first year, much more the next, and the third year the old stock may be cut away, and the growth from that time on will be very rapid, and soon form a good bearing tree.

TO SOW SEEDS WITH ADVANTAGE.

THIS is the first operation of rearing. When seeds are deposited singly, as in rows of beans

or large nuts, they are said to be planted; where dropt in numbers together, to be sown. The operation of sowing is either performed in drills, patches, or broad-cast. Drills are small excavations formed with the draw-hoe, generally in straight lines parallel to each other, and in depth and distance apart, varying according to the size of the seeds. In these drills, the seeds are strewed from the hands of the operator, who, taking a small quantity in the palm of his hand and fingers, regulates its emission by the thumb. Some seeds are very thinly sown, as the pea and spinage; others thick, as the cress and small salading.

Patches are small circular excavations made with the trowel; in these, seeds are either sown or planted, thicker or thinner, and covered more or less, according to their natures. This is the mode adopted in sowing in pots, and generally in flower borders.

In broad-cast sowing, the operator scatters the seed over a considerable breadth of surface, previously prepared by digging, or otherwise being minutely pulverized. The seed is taken up in portions in the hand, and dispersed by a horizontal movement of the arm, to the extent of a semi-circle, opening the hand at the same time, and scattering the seeds in the air, so that they may fall as equally as possible, over the breadth taken in by the sower at once, and which is generally six feet; that being the diameter of the circle in which his hand moves through half the circumference. In sowing broad-cast on beds, and narrow strips or borders, the seeds are dispersed between the thumb and

fingers by horizontal movements of the hand in segments of small circles.

Dry weather is essentially requisite for sowing, and more especially for the operation of covering in the seed, which in broad-cast sowing is done by treading or gently rolling the surface, and then raking it; and in drill-sowing, by treading the larger seeds, as peas, and covering with the rake; smaller seeds, sown in drills are covered with the same implement, without treading.

TO MANAGE ORCHARDS.

THE whole ground of an orchard should be dug in the autumn, and laid up in a rough state for the winter, giving it as much surface as possible in order that the weather may fully act upon and meliorate the soil; thus following it as far as the case will admit. Observe to dig carefully near to the trees, and so as not to hurt their roots and fibres. If the soil be shallow; and if these lie near to the surface, it would be advisable to dig with a fork, instead of the spade.

Crop to within two feet of the trees the first year; a yard the second; four feet the third, and so on, until finally relinquished; which, of course would be against the eighth year, provided the trees were planted at 30 or 40 feet apart, with early bearing sorts between. By this time, if the kinds have been well chosen, the temporary trees will be in full bearing, and will forthwith defray every necessary expense.

Let a small basin or hollow be made round the stem of each tree, a foot or eighteen inches

in diameter, and two or three inches deep, according to the extent of its roots. Fill this basin with littery dung, to the thickness of five or six inches, over which sprinkle a little earth, just enough to keep it from being blown about. This both nourishes the young fibres, and keeps the ground about them moist in hot weather, if wetted freely once a week.

TO CURE DISEASES OF ORCHARD-TREES.

A tree often becomes stunted from an accumulation of moss, which affects the functions of the bark, and renders the tree unfruitful. This evil is to be removed by scraping the stem and branches of old trees with the scraper; and on young trees a hard brush will effect the purpose. Abercrombie and Nicol recommend the finishing of this operation by washing with soap-suds, or a medicated wash of some of the different sorts for destroying the eggs of insects.

Whenever the bark is decayed or cracked, it ought to be removed.

The other diseases to which orchard trees are subject are chiefly the cankar, gum, mildew, and blight, which are rather to be prevented by such culture as will induce a healthy state, than to be remedied by topical applications. Too much lime may bring on the canker, and if so, the replacing a part of such soil with alluvial, or vegetable earth, would be of service.

The gum may be constitutional, arising from offensive matter in the soil, or local, arising from external injury. In the former case, improve the soil; in the latter, employ the knife.

The mildew may be easily subdued at its first appearance, by scattering flour of sulphur upon the infected parts.

For the blight and caterpillars, Forsyth recommends burning of rotten wood, weeds, potato-haulm, with straw, &c. on the windward side of the trees, when they are in blossom. He also recommends washing the stems and branches of all orchard trees, with a mixture of "fresh cow dung with wine and soap-suds," as a white washer would wash the ceiling or wall of a room. The promised advantages are, the destruction of insects, and fine bark, more especially when it is found necessary to take off all the outer bark.

WATERING PLANTS.

A copious supply of water is very essential to a good garden. Loudon remarks 'that many kitchen crops are lost or produced of very inferior quality, for want of watering. Lettuces and cabbages are often hard and stringy; turnips and raddishes do not swell; onions decay; cauliflowers die off; and in general in dry seasons all the *cruciferae*, (flowers with petals in the form of a cross) become stunted, or covered with insects, even in rich, deep soils. Copious waterings in the evenings, during the dry seasons would cause that fulness and succulency which we find in vegetables produced in the low countries, and in the Marsh Gardens at Paris, and in England at the beginning and latter end of the season.

'Watering is requisite for various purposes, as aliment to plants in a growing state; as a

support to newly transplanted plants; for keeping under insects; and keeping clear the leaves of vegetables. One general rule must ever be kept in mind during the employment of water; that is never to water while the sun shines. A moment's reflection will convince any one that this rule is agreeable to the laws of nature, for during rain the sun's rays are intercepted by a panoply of fog or clouds. All artificial watering, therefore, should be carried on in the evening or early in the morning, unless it be confined to watering the roots; in which case transplanted plants, and others in a growing state may be watered at any time, and if they are shaded from the sun, they may also be watered over the tops.'

TO PROMOTE THE HEALTH OF ORCHARD TREES.

MR. LOUDON, the able conductor of the Gardener's Magazine, has published some extracts from his evidence, given at an investigation of the affairs of the London Horticultural Society, relative to the 'General Management and Plan of the Garden,' from which the following is selected:

'The orchard is the most valuable department in the garden; but even here there are hedges. A great error in the management has been, first sowing down the compartments containing the standard trees, with tap-rooted plants; and next, breaking it up and planting it with exhausting plants, such as the potatoe. After the trees were planted, it ought never to have been once dug or cropped in any way; it ought merely to have been hoed to destroy

weeds. All digging among fruit bearing trees is highly injurious to them, by preventing their roots from coming near the surface.'

This doctrine is not exactly in accordance with the recommendations of most writers who have given directions for the culture of fruit trees. It has been thought expedient to crop the ground on which orchard trees are planted, at least for several years, in order to defray the expense of hoeing and cultivating it. This may perhaps be done while the trees are small, or when fruit is not the principal object of culture; but as a general rule one crop at a time is enough.

Nicol, a famous Scotch Horticulturist, says 'It is proper to crop the ground among newly planted orchard trees for a few years, in order to defray the expense of hoeing and cultivating it, which should be done until the temporary plants are removed, and the whole be sowed down to grass. But it is by no means advisable to carry the system of cropping to such excess as is frequently done. If the bare expense of cultivating the ground and the rent be paid by such cropping, it would be considered enough. As the trees begin to produce fruit, begin also to relinquish cropping. When by their productions they defray all expenses, crop no longer. I consider these as being wholesome rules, both for the trees and their owners.'

Rule.—'Crop to within two feet of the trees the first year; a yard the second; four feet the third; and so on until finally relinquished; which of course would be against the eighth year, provided the trees were planted at thirty or forty

feet apart, with early bearing sorts between. By this time, if the kinds have been well chosen, the temporary trees will be in full bearing, and will forthwith defray every necessary expense while they remain, or until the principal trees come into a bearing state, and it becomes necessary to remove them; after which the land should be sown down with grass. But until then, the ground should be properly cultivated, though not cropped close to the trees; and a moderate quantity of manure should be dugged in every second and third season.'

TO RAISE APPLE TREES FROM CUTTINGS.

'A horticulturist in Bohemia has a beautiful plantation of the best sort of apple trees, which have neither sprung from seeds nor grafting. His plan is to take shoots from the choicest sorts, insert them into a potatoe, and plunge both into the ground, leaving but an inch or two of the shoots above the surface. The potatoe nourishes the shoot whilst it pushes out roots, and the shoots gradually spring up and become a beautiful tree, bearing the best of fruit without requiring to be grafted.'

IMPORTANT TO GARDENERS.

ON every square rod planted with cucumbers, put a piece of a board flat on the ground, to preserve your plants from a striped-bug, which some seasons is very destructive. This simple experiment may seem to be novel and ineffectual; but the secret of the matter is, the board

forms a shelter for a toad, which hops from under the cover at night and destroys the bugs, and during the day time may be found by turning over the board. Should any one have doubts on the subject, he can easily try the experiment.

AN EFFECTUAL METHOD OF DESTROYING SLUGS AMONG
CAULIFLOWERS, CABBAGES, &c.

SIR—Having had all the young cauliflowers and cabbages in my garden devoured by the slugs, after I had repeatedly planted them, and having tried every expedient recommended in your valuable Magazine, such as salt, lime, and dibbling holes round the borders, and all having failed, I at last spread some well cut chaff round the plants under hand-glasses, and some round the outside of the glasses. The success has been complete. The slugs in their attempt to reach the plant, find themselves immediately enveloped in the chaff, which prevents their moving, so that when I go in the morning to elevate the glasses to give the plants air, I find hundreds of disabled slugs round the outside of the glasses, which I take away, and destroy. This mode of proceeding being so simple and so effectual; I have thought it would be doing a public service to let it be known through the channel of your Magazine, particularly as (from the mildness of the winter) the damage done by the slugs has been so universal.

CHLORINE ON SEEDS FOR SOWING.

THE employment of chlorine, or oxymuriatic acid, in preparing seeds for sowing, is recommended

ed by M. Remord, as capable of increasing the product three and four fold what it would be in ordinary cultivation. The process is as follows:—The grain to be first steeped for twelve hours in water from a river or fountain, never from a well; then to be added to the water sixteen or seventeen drops of oxymuriatic acid for every quart—the whole to be shaken together, in order that it will be mixed. After six hours additional soaking, under exposure to the sun and beneath a glass bell, or for want of such an instrument, a frame of oiled paper, the seeds to be put into a cloth; then to be divided for the purpose of sowing, and mixed with a sufficient quantity of cinders, sand, or dry mould; after this, to be sown and the water in which they were so ^{thoroughly} thrown over the ground which covers them. It is also recommended, when practicable, to water, at intervals, the plants, with acidulated water of oxymuriatic acid, in the proportions of that used in steeping the seeds, in order to keep up the activity of their vegetation, and to favor the developement of the plant.

TO DESTROY THE RED SPIDER IN HOT-HOUSES, &c.

BY WM. REDDING.

SIR,—Allow me to lay before my brother gardeners my method of destroying the red spider in vineries, hot-houses, and peach houses; a method I have practised for these ten years with the greatest success. I take half a pound of flour of sulphur, kill it with a little milk, add half a peck of hot lime and two small balls of

whiting, and mix it well with water, until it attains the thickness of whitewash, when it is fit for use. I then with a brush, wash the flues and every part of the house, which is of brick, with this mixture in the month of February or March; but should they require a second washing, which is seldom the case, they may be done at any time, when the fires are on, with the greatest safety, only using it sparingly for 5 or 6 feet from the furnaces.

TO PRESERVE PEACH AND PEAR TREES.

To preserve the Peach tree, and render it productive, I have, for years, pursued the following course with great success, and am induced to believe the Peach tree () be made healthy for many years, if constantly attended to.

In the fall remove the earth around the roots of the tree, and carefully cleanse from all vermin; lay the roots well bare, and previous to replacing the earth, put around each tree from 10 to 14 pounds of tobacco stems, pound them with a mallet well down, mixing with the earth, until the space is again filled around the tree: this should be firmly done, with care not to bruise the bark of the root. In the spring, when pruning, take care to keep down the shooting branches; in order to prevent the tree from growing high, cut from the extremity of every branch: the effect will be to give strength and constitution to the stock, and more nourishment to the bearing branches. The great object is to prevent an exuberant growth of the tree; for

it is to the exuberance of growth that the early decay of the tree in our climate may be attributed; the excess of growth is great for a few years, and soon produces disease and decay by exhaustion. The course I propose will prevent the early decay of the tree. I feel a confidence from the fact, that a friend of mine now has peach trees, in a healthy and vigorous state, twenty-seven years old, with every appearance of continuing for a great length of time. The course here recommended, has been pursued by him for many years, and always with success.

The Pear tree at this season always requires much attention. Open around the roots and cleanse them thoroughly—if any rough bark appears, remove it, and to each tree put around the roots from three to four bushels of house ashes; over this throw the earth lightly—the frosts of winter will not injure the tree—when the spring opens genially warm, scrape the outer bark of the tree well down, removing freely the outer bark, leaving a thin covering only to the wood. Immediately on this being done, apply to the surface of the body the following wash:—take of soft domestic soap one part, of water two parts; boil them to a strong ley, and when as hot as it can be made, with a swab go over the part previously scraped thoroughly. Great care should be taken in pruning. Remove the decaying wood, carefully cutting into a healthy part; the wound should be covered from the weather by a preparation, when the healing process will immediately commence. Each year select a few suckers for bearing fruit, and when they attain a healthy appearance, remove the extrem-

ity of the branch, and in this manner keep down an extensive growth of the tree. This must be done with care, as from the course first proposed there will be a great flow of sap, and if the tree is topped down too much, will produce decay. If this course is pursued, it will be found that the Pear tree will be restored to health; the bark on the oldest trees will become fresh, tender, and allow a freer circulation of the juices which are required to secure it from decay, and secure an abundant and delicious production of fruit. The principal cause of decay in the Pear tree of our country is from the bark becoming so firm and close, as to prevent a circulation of juices freely, and hence the blight of fruit, premature decay of the foliage, and final destruction of the tree.

TO CULTIVATE SQUASHES AND MELONS.

SQUASHES, melons, and all other vines require good *old* manure; nothing suits them better than vault manure, kept one year after it is taken out; hog's manure is excellent. There should be, for squashes, five or six shovelfuls to each hill, distance about six feet; as the vines expand it will be very useful to check their growth for the benefit of the fruit. It is generally placed on the side shoots, and only one squash should be permitted to grow on one side shoot, and as soon as the blossoming is over, the shoot should be stopped by pinching off the head of it. The main vines should also be stopped after they have a sufficient number of side shoots and squashes. This kind of pruning will have a ten-

dency to improve the size and the quality of the fruit; it is advisable to take off the last blossoms and small squashes which have no chance of coming to any maturity before the white frosts take place, and which would injure the earlier and better fruit, by depriving it of some nourishment. When the latter part of the season comes on, and the squashes have nearly completed their growth, it is advisable to break off the leaves where ever they shall shade the fruit, in order that it should have the uninterrupted benefit of the sun, and to cut off freely the straggling vines, so that none should be left but those which bear fruit; this will hasten their maturity and perfection. The same system of pruning is still more needful for musk melons; it will improve the flavor and size of the fruit, and is, I believe, universally practised in the old countries. The French always pinch off the small top of the heart, at the earliest period, which they call *charter*, and which encourages the growth of the slender side shoots, which are the fruit bearers. The ripening of the mellons is much hastened by placing under them when about the size of an egg, large pieces of slate stone, or a shingle; the melons are also kept from the ground worms by this process. Although our soil and climate are more powerful and forcing, and might be dispensed in some measure with these refinements of the gardener's art, yet they will repay well for the little time and attention required, and I have always found it my pleasure and my advantage, to attend to it regularly

TO DESTROY INSECTS ON PLANTS.

It seems necessary, in order to concentrate our efforts, in one common cause, against our numerous enemies, that investigations and experiments should be made known. An experiment, fairly conducted, whether successful or not will have its use. If successful, it is of great importance; if unsuccessful, it will prevent a repetition, and may lead to one of more efficacy.

Fifteen grains of corrosive sublimate dissolved in two ounces of spirit and add to it one quart of water, with a little gum arabic, and applied with a brush to young fruit, peaches &c. was not found effectual against the rose bugs; but it destroyed both fruit and foliage. The same solution applied to young cucumbers did not prevent the yellow bugs from injuring them, neither did it appear to injure the plants.

A strong decoction of wormwood (*artemesia absinthium*) with a fine powder of colombar-root (a very bitter substance) and a little gum arabic, to make it adhesive, applied to fruit and to young cucumbers, was not effectual against the insects.

The best antidote against the rose bug, and the small yellow bug, that has yet come under my inspection is *slacked lime* applied with a dredging box, while the fruits or plants are wet with dew. If the fruit or plants be wet with a weak solution of gum arabic, previously to the application of the lime, it will remain on them much longer, and no injury will be sustained by it. If applied to young cucumber plants, the seed leaves must be turned up, wet, and the lime applied as aforesaid. The lime used had

been nicely slacked with little water, one year, for the purpose of the garden. Perhaps it would be equally well, if slacked immediately before its application.

It was found, that if rose bugs, while on the plants, be thoroughly wet with very strong soap suds, (one gill of strong soft soap to one quart of water) they soon die. This strength did not injure the plants on which it was tried. The experiment was made when the bugs were on the decline, and whether the mixture would have the same effect in the beginning of their race, while in their utmost vigor, or prevent them from preying on plants wet with it, further experiments may determine. It is needless to say any thing in this paper, as to the fertilizing power of this application, or that of lime.

In strong soap suds (one gill of soap and two quarts of water) rose bugs will die in a short time, and this mixture supersedes the necessity of scalding them, as is the case when caught in simple water.

DIRECTIONS FOR CULTIVATING THE MULBERRY TREE.

THE ground for the seeds, being of good soil and having a warm aspect, requires to be ploughed one foot or more in depth, and spaded up several times; to be freed from old roots, stones, and pebbles; and to be lightly mixed with old manure. If the soil is in a hard condition it should be softened with ashes, soot, or old mould. Towards spring after another ploughing and harrowing, it should be divided and raised into as many beds as are wanted;

especially for the convenience of watering, if there is water at hand; these beds should never be so wide but what the centre can easily be reached by the hand. The time for sowing should be the first of April; or immediately after the equinoxial storm in this climate, and a few weeks later on high lands. At such a time, in fine, as there is no danger of long deep frost. —The seeds now on hand, are mixed with equal quantities of sand; before sowing they should be steeped several hours in water, and left to dry; the next day they must be sown by the hand, in straight drills, an inch and a half deep, and five or six inches asunder, and be covered over with the hand or a small hoe or rake. This mode of sowing is simple, sufficiently safe, and easy even to those who only amuse themselves with gardening. It is a good precaution to strew some straw between the drills, in such a manner, however, as not to obstruct the view of the straight lines, to which much attention must be paid. The use of hot beds protected by glasses, or of boxes kept in green houses, is not approved by culturists, from a sound experience that it is better to trust to healthy good seeds raised in the open air, than to run the risk of a chance of temperature. Unless the weather is remarkably cool, and the ground too dry, the seeds will germinate and shoot up on the 12th day, at farthest.

Several cares or attentions are necessary during the first two months, and sometimes afterwards; these are *watering*, *weeding*, and *thinning*. The first mentioned should be frequently attended to in the beginning, and so long as the

seedlings cannot have thrown their roots deep; the second requires to be done whenever any of the old herbs, spontaneous on that ground, come up in the drills or between them; the last, *thinning*, should not be long deferred, because mulberry seedlings grow the better for being as much as two inches apart, or even three in the second year. Delay in this operation would render it difficult to conduct it without injuring the roots of those left behind; and when too near to each other, the plants will certainly suffer by spindling. Any delay in thinning is proper which might in a few days show the best seedling of two or more in a cluster.

Budding, the next thing necessary, consists in clipping or pinching off all the latter buds from the stock of the seedling, leaving the only middle one, which thereby profits by the whole sap, and strengthens the plant. This, however, should always be done before the leaves unfold, lest the pulling or twisting of the bud should injure materially the tender bark.

Topping, the last attention necessary, must be done early in the spring of the second year. It is performed by cutting down every seedling with sharp edged nippers, which gives no strain to the root. The plants are cut level with the ground. This process is principally intended for the benefit of the root, and the enlargement of the stem or stalk, which by the next fall will be more than a foot high, and as thick as the finger.

The seedlings, to be in a good condition at the end of the second year, require nothing but a healthy body of roots, and a strong stock; any-

thing further for the trimming and sharpening of the bushy part will be done in the nursery by grafting or pruning: of all which we will take care to inform culturists in good season.

GRUBS IN PEACH TREES.

As it would be desirable to know and try every possible means that can diminish the destruction of peach trees by grubs at their roots, I take the liberty to communicate all that experience among various friends and neighbors has brought to my knowledge.

In New Jersey they make use of rotten fish, put in the spring at the roots of the trees. I have seen beautiful peach trees which I was told were thus freed from worms. This remedy presents another advantage; the rotten fish being a very good manure.

A gentleman of respectability, of Brooklyne, L. I. who had purchased 4 peach trees from me, placed round two of them coal ashes, which were thus happily preserved. But the others suffered the ordinary depredation. The above means receive confirmation in France, and in England, where they use the soot of the same combustible, and also of wood to destroy the white grubs; the soot of these substances being very acrid. This is a convenient and easy remedy, which might be generally used, and I have adopted it for many of my trees.

Another effectual and ingenious expedient is; I understand, adopted by the Governor of Connecticut, Mr Smith, which consists in covering the body or trunk of the tree with straw, from

June until the end of August, in order to guard its surface from the deposition of eggs by the fly, which is said to cause the mischief. I am told that by this means he has preserved all his trees to full age, and good health. This process was announced in February, last year, by my friend, Dr Pascalis, of New York, who appears to have paid much attention to the subject, while he resided in Philadelphia. He says that the matted sheaf of straw, bound round the tree, need only extend quite down to the lower part of the trunk, because the eggs deposited are ejected out by the gum oozing from the bark, and destroyed by drying, except at some height from the earth.

It is very pernicious to use fish oil on trees, as it shuts the pores hermetically, and, preventing transpiration, is often the cause of death to the tree.

ANDREW PARMENTIER.

To cause hyacinths and other bulbs to bloom in the winter season, in pots or glasses.

FOR this purpose, single hyacinths, and such are the designated earliest among the double, are to be preferred. Single hyacinths are generally held in less estimation than double ones; *their colors, however, are more vivid, and their bells, though smaller, are more numerous.* Some of the finer sorts are exquisitely beautiful; they are preferable for flowering in winter to most of the double ones, as they bloom two or three weeks earlier, and are very sweet scented. Roman narcissus, jonquilles, polyanthus, narcissus, double narcissus, and crocuses;

also make a fine appearance in the parlor during the winter. It is a remarkable circumstance of the crocus, that it keeps its petals expanded during a tolerably bright candle or lamp light, in the same way as it does during the light of the sun. If the candle be removed, the crocuses close their petals, as they do in the garden when a cloud obscures the sun; and when the artificial light is restored, they open again, as they do with the return of the direct solar rays.

Hyacinths intended for glasses should be placed in them about the middle of November, the glasses being previously filled with pure water, so that the bottom of the bulb may just touch the water; then place them for the first ten days in a dark room, to promote the shooting of the roots, after which expose them to the light and sun as much as possible. They will blow, however, without any sun, but the colors of the flowers will be inferior. The water should be changed as it becomes impure; draw the roots entirely out of the glasses, rinse off the fibers in clean water, and the glasses well washed inside; care should be taken not to suffer the water to freeze, as it not only bursts the glasses, but often causes the fibers to decay. Whether the water be hard or soft is of no great consequence; but soft or rain water is considered preferable, but it must be perfectly clear. *Forced bulbs are seldom good for any thing afterwards.*

Nosegays should have the water in which their ends are inserted changed, on the same principal as bulbous roots, and a much faded

nosegay, or one dried up, may often be recovered for a time, by covering with a glass bell, or cap, or by substituting warm water for cold.

TO PROPAGATE GRAPE VINES FROM SEEDS.

WHEN vines are to be raised from seeds, they should be sown the latter end of February, or beginning of March, or they may be sown as late as the middle of April; but the earlier the better, in rows, in borders, or in beds. Sow the seed in rich, light earth, (well spaded and raked) about an inch deep, and if the weather is dry, water them occasionally, and when the seeds begin to vegetate, the plants should be watered in the evenings in dry weather. When the plants are six inches high, they should be carefully tied to rods, leaving only one stem the first year; the rods should be nearly as high as the vines are likely to grow the first season.—When the leaves begin to drop, pull off as they turn yellow, so that the wood may ripen well.

About the latter end of March, the next season, they may be planted out where they are intended to remain, and they should be cut off to the third eye if very strong, but only to the second, if weak, rub off the lower buds with the finger and thumb. And afterwards they are to be managed as the cuttings that are planted in the vineyard. But it is to be observed, that the vines propagated from seed do not all bear fruit, probably not more than the half of them; therefore, if they are strong growing vines, I would advise to engraft all the barren ones.

TO RENDER POTATOES DRY.

WITHIN these few weeks, a farmer, residing in this vicinity, has discovered a simple, but, as we are informed, an efficacious plan of improving potatoes. The agriculturist keeps an ass for the lighter jobs of carriage, and one day, when other food was not just at hand, a servant was ordered to cut a quantity of the green shaws (tops) from a particular drill, and, at the same time, the farmer added that the operation could do little injury, as he intended to dig the potatoes next day for the use of the house. The order was promptly obeyed, and Martin swallowed the shaws with the gusto of an epicure. Though the field lay low, the farmer was astonished next day at finding the soil on both sides of the drill, where the roots had been denuded of the shaws, much wetter than the other and on a close inspection, he discovered that the extra moisture had oozed out of the shaws that remained in the ground. The potatoes that had been previously raised had been so wet, soft and unsavory, that they were unfit for the market, but it appeared that hewing away the foliage, had had the effect of draining off the extra moisture, and rendered them as dry, mealy, and nutritious, as the most enthusiastic admirer of murphies could desire. The experiment we hear, has been almost daily repeated, uniformly with the same success.

TO CULTIVATE PEAS IN THE FRENCH MANNER.

THOMAS BLAIKIE, in an article published in a late number of London's Magazine, gives the follow-

ing as a mode of cultivating early peas practised in France:—"The market gardeners place their rows east and west, and raise a little ridge of earth on the north side of the row, which protects them from the north winds, and receives at a more powerful angle the sun's rays; by which more heat is reflected on the plants in the day time, and at the same time more absorbed to be radiated on them at night. When the plants show their second blossom, the top is pinched off, which throws the force of vegetation on the forming pods, hastens the maturity of the crop, and increases the size of the peas"

THE QUICKEST WAY TO PROCURE GRAPES.

THE quickest method of procuring grapes, is to graft into the body, near the ground, or which is preferable, into the roots of large vines. In the following year, if the graft has taken, fruit will be produced. Thus every farmer, who has wild vines growing on his ground, may, by procuring cuttings of hardy foreign or native kind, and paying a little attention to the grafting and training, be soon and amply supplied with grapes for market or wine making.

TO MAKE PLANTS PRODUCE FLOWERS.

A writer for the *Gardener's Magazine* says that "fastening a piece of wire round the stem is the best method of making plants flower that are difficult to flower." [Would a string answer instead of a wire?]

*Instructions for artificially fecundating Carnations
cultivated in pots.*

THE numerous varieties of Carnations, which can be obtained by artificial fecundation, should induce amateurs to devote themselves to this process. The manner of proceeding is as follows:

The operation must be performed, before the blossom is entirely expanded. The corollas should be carefully opened, and the anthers immediately extracted with delicate scissors, great caution being used not to wound the fillets which support them, or any other part of the flower. The favorable moment for executing this, is that which precedes the rising of the sun; because at that time, the pollen being humid, it is closely attached to the anthers.

Between eight and nine o'clock, the plants being exposed to the full influence of the sun,—the perfectly matured pollen from another variety of carnation, must be taken and placed with care upon the stigma of the flower, which it is intended to fecundate, and from which the anthers have been extracted; repeat the operation, two or three times during the day.

If the process has been successful, the flower, on which the experiment was made, will fade or wither in twenty four or thirty six hours; on the contrary, if the fecundation has not been effected, the corolla will preserve entire, for ten or twelve days and more, all its freshness and splendor; it will then be necessary to repeat the operation, which should always be performed in dry weather; and it is proper that the plant

should be protected from the rain and mist, until a swelling is perceived in the ovary or germ.

By frequent watering, and exposing the plants to the north, the maturity of the pollen and the stigma may be retarded.

The duration of the faculty of procreation varies remarkably in the pollen of several plants of the same species; in some it continues only for two or three days, but in others from ten to twelve.

When the fecundation has really taken place, the pollen, which had been artificially placed upon the stigma, remains so closely attached, that it cannot be removed with a hair pencil; it changes form and color, and soon disappears; but this is not the case, if the fecundation has not been perfect, and the pollen is easily detached from the stigma; its color and form is not changed, and it remains visible, until the total destruction of the flower.

The greater the quantity of the pollen, the larger is the number of the seeds.

The plant which has been artificially fecundated, yields seeds, which generally produce flowers formed like the mother; but colors resemble those of the father.

The number of seeds obtained by art is never so considerable, as when nature appears alone.

Plants which are artificially fecundated, are not so much visited by bees, and other insects, probably because these plants have been deprived of their anthers.

TO PRESERVE PLANTS FROM THE CATERPILLAR.

AN experiment has been tried for three years to preserve goosberry plants from the ravages of the caterpillar, by brushing the stems with a soft brush dipped in common train or fish oil, about the time of their first appearance, or at any time when infested, which appears to destroy or greatly to annoy them. It also much improves the growth and productiveness of the tree the following year, and clears it of moss. This communication is made public, in the hope of exciting experiments to prove how far it may be useful for the preservation of other trees.

TO PREVENT MILDEW ON GRAPES.

‘TAKE a pint and a half of sulphur, and a lump of the best unslacked lime of the size of the first, put these in a vessel of about seven gallons measurement, let the sulphur be thrown in first, and the lime over it, then pour in a pail of boiling water, stir it well, and let it stand half an hour, then fill the vessel with cold water, and after stirring it well again, allow the whole to settle—after it has become settled dip out the clear liquid into a barrel, and fill it with cold water, and it is then fit for use. You next proceed with a syringe holding about a pint and a half, and throw liquid with it on the vines in every direction, so as completely to cover foliage, fruit and wood; this should be particularly done when the fruit is just forming, and about one third the size of a pea, and may be continued twice or thrice a week for two or three weeks;

the whole process for one or two hundred grape vines need not exceed half an hour.'

TO WATER PLANTS.

A copious supply of water is very essential to a good garden. Loudon remarks that 'many kitchen crops are lost or produced of very inferior quality, for want of watering. Lettuces and cabbages are often hard and stringy; turnips and radishes do not swell; onions decay; cauliflowers die off; and in general in dry seasons all the *cruciferae*, (flowers with petals in the form of a cross) become stunted, or covered with insects, even in rich, deep soils. Copious waterings in the evenings, during the dry seasons would cause that fulness and succulency which we find in vegetables produced in the lower countries, and in the Marsh Gardens at Paris, and in England at the beginning and latter end of the season.

Watering is requisite for various purposes, as aliment to plants in a growing state; as a support to newly transplanted plants; for keeping under insects; and keeping clearer the leaves of vegetables. One general rule must ever be kept in mind during the employment of water; that is, never to water when the sun shines. A moment's reflection will convince any one that this rule is agreeable to the laws of nature, for during rain the sun's rays are intercepted by a panoply of fog or clouds. All artificial watering, therefore, should be carried on in the evening or early in the morning, unless it be confined to watering the roots, in which

ease transplanted plants, and others in a growing state may be watered at any time, and if they are shaded from the sun, they may also be watered over the tops.’

The water used for watering vegetables, if taken from a well or cold spring, should be exposed one day at least to the shining of the sun, otherwise it will give a chill to the plants. Only a small quantity should be applied at once, that it may have an effect similar to that of a refreshing rain: for water applied too plentifully sometimes washes away the finest of the mould from the roots or makes little cavities about them, which admit too much air.

VITALITY OF SEEDS.

THE principal of life imparts to all organized beings, whether vegetable or animal, the power of resisting, to a limited extent, the ordinary laws of matter. Men have sustained a temperature of 40 degrees below zero, and a heated atmosphere of 260, without serious injury, while their bodies indicated, in these extremes, about the ordinary animal heat of 98, which never varied more than three or four degrees. It is well known that water freezes at 32, and boils at 212. Humboldt saw fishes alive and in apparent health in a temperature of 210. Plants have been found to grow in hot springs, and Foster saw flowers growing, in high perfection in one, the temperature of which was 210. Mr. Hunter ascertained that the heat of trees was always several degrees *above* that of the atmosphere when the atmospheric temperature was

below 56 deg. but it was always several deg. *below* when the weather was warmer. The eggs of birds, while they retain the principle of life, indicate a temperature of considerably above the surrounding medium. Some of the inferior animals, seem to have their vital functions suspended, and to remain frozen or in a torpid state for a long time without injury. The tenacity of the vital principle is found also in seeds of many plants, which may remain buried for centuries, and afterwards grow, on being brought within the sphere of the germinating agents.

TO CULTIVATE GRAPE VINES.

NOMENCLATURE.

OUR language is somewhat deficient in definite terms for various operations performed upon the vine. It will therefore be proper for me, before proceeding further, to establish the meaning of the words I shall have occasion to employ.

The words *pruning*, *lopping*, and *trimming*, are commonly used to express the same thing and different things. There are various distinct operations to which they may be applied, and are applied; and much confusion is the consequence.

In the course of this paper, I shall use the term *pruning*, for the cutting which the vines receive in the fall, after it has shed its leaves, or in the spring, before it has recovered them. *Lopping* I reject altogether, as meaning a more violent operation than those regularly performed.

med upon the vine. *Trimming* I shall apply exclusively to the operation, performed several times during the summer, of plucking off the useless or injurious shoots. Thus, *pruning* will correspond with the French word *tailler*; and *trimming*, with *ebourgeonner*.

PROPAGATION.

Of the mode of propagating the vines I shall say nothing, as they are generally well understood. I will observe, however, that my own experience has convinced me, that cutting with *one* bud or eye is as likely to succeed, and will produce at least as fine a plant, as a cutting of a foot or eighteen inches long; especially if it be planted in a pot, early in March, and placed in a hot bed until warm weather. In July it may, with perfect security, be turned out of the pot into the place, in the open ground, where it is to grow. Put hot beds and flower pots are not indispensable. It will do as well to plant the cuttings in boxes at the usual time for the open ground, and place them in some situation where they may be sheltered from the excessive heat of the sun. In the fall they can be transplanted to their distinguished places. One of the advantages of this mode of propagating by cuttings is, that an ordinary cutting will supply you with ten or twelve plants instead of only one; a consideration of some importance when you have only one cutting of a rare species of grape.

PRUNING.

The proper time to prune the vines is in March, earlier or later in the month, according

to the state of the weather. To prune too early, is apt to make the buds shoot prematurely, before the frosts are over; and to prune too late exposes them to an injurious bleeding, or loss of sap. If you prune in the fall you run the risk, should the winter be severe, of having most of the bearing branches destroyed. In this city and neighborhood, people commonly prune too early in the spring. Most persons have already pruned theirs a week or fortnight ago, before the late hard frosts and heavy falls of snow. Mine are not yet pruned, (March 23d,) and may not be if the weather continues unfavorable, for a week or ten days to come.

In pruning, cut half an inch above the bud, to prevent the branch that will sprout from it from being easily blown or broken off. The little stump that remains may be removed the next year — Also cut slopingly, and on the side opposite to the bud, that the sap which exudes may not run down upon it and injure it.

A vine should be pruned according to its age

1st year; leave one bud.

2d year; leave two buds.

3d year; leave three buds.

4th year; leave four buds.

5th year, and afterwards; leave five or six buds.

I speak only of those vines that grow in open vineyards and are staked, and not of those spread on trellises; although most of these rules are applicable to the latter also. But they require other attentions, and deserve a separate notice.—In the third year, vine dressers generally leave a short *side-shoot* to the principal stock.

with one bud on it; in the 4th year, a side-shoot with two buds; in the 5th year, one with two or three buds. Indeed, if the vine be of mature age and exceedingly vigorous, they often leave the principal branches from three to five, or six feet long, according to its strength, with all its buds; and, at the same time, a side-shoot a foot long. In some soils and situations, the vine is so vigorous that it would exhaust itself in barren length of limbs, and produce no fruit, if you pruned it to so few buds as those prescribed for ordinary cases; and you must therefore weaken and tame it, as it were, by loading it with fruit. Each one must judge for himself, from observation when these precautions become necessary. When a vine betrays too much luxuriance, it is often brought into bearing, by leaving five or six of the last year's branches, one of them five or six feet long, and the others with from one to five or six buds upon each, according to its apparent strength. In those cases, on the contrary, where the vine is feeble, two or three branches, with from four to two buds on each, will be enough.

It is the opinion in France, that the vine should be kept *low*, in order that its fruit may receive the benefit of the heat reflected from the ground; and that it should be suffered to grow and bear high, only in the hottest climates. In some countries it is trained upon the trees. I have seen it, in the plains of Lombardy, hanging from the elm or poplar, in festoons from tree to tree, for great distances, covered with loads of fruit. But the trees are there regularly trimmed and topped for fire wood, and therefore gives so little shade as not to injure the grape.

STAKING AND TYING.

As soon as the vine is pruned, it must be staked with poles of the height which you intend to allow the vines to attain; and the vines must be tied to them. By staking later, after the buds have shooted, you may break off many of the young branches.

TRIMMING.

About the middle of May, or somewhat later, according to the season, it will be necessary to trim your vines.

You will find they have produced many young branches, and that in some instances several shoots have sprung from a single bud; and you must therefore reduce each vine to that allowance of branches which you had assigned it at the time of pruning, according to its age, or its age and strength both considered. If this be its first year, carefully pluck or pinch off all the shoots but one, leaving that which appears most thriving; if its second year, of all but two; and so on, according to the age and vigor of each.

This operation must not be performed too soon; for, if it be, the vine will throw out a still greater number of suckers or shoots than it had before. It is not difficult to ascertain, by inspection, when the shoots have attained the size at which they may be securely removed. Do not hesitate to remove some that show fruit; for if that fruit were left, it would only diminish the quality, and perhaps even the quantity, of the whole crop.

After trimming, immediately tie the shoots to the stakes.

About the first of June, or somewhat later, according to the season, and to the precocity and vigor of the plants, you must again tie the shoots to the stakes, for they will have grown much longer than when you tied them last; and give them a second trimming, by pinching off such as have started from the axillas of the leaves.

About the first of July, or somewhat earlier or later, according to the circumstances above alluded to, give them a third trimming and tying, taking off all useless shoots. In France, it is usual at the same time to break off the top of the vine, at a joint, about the height of the stake, or espalier, or wall. But many experienced persons think it had better not be done in this country. If done at all, it should be done late; and I say, generally, of the various trimmings, that they had better be done later than earlier than I have indicated; for vegetation is so luxuriant in this climate, that the vine is much more apt, than in Europe, to push new shoots after being deprived of the first.

It will be necessary, during the whole summer, to remove from time to time, any new shoots that may appear.

TRELLISES.

To prune a vine trained on trellises or espaliers, or walls, you unite and loosen from the trellis all the young branches, leaving all the older and principal branches attached. Then cut off all the dead wood, knots, little stumps, useless twigs, &c. and remove dead leaves, cobwebs,

snails, insects, nerts, &c. The best way of training a vine, is to stretch out its two principal limbs, like arms, horizontally, to the right and left, about a foot from the ground. This, I will suppose, has been done in former years, and that the vines remain divided in that way. You will permit each of these arms to advance, every year, from three to six feet, according to the strength of the vine, and you will prune to the proper length, accordingly, the extreme or leading shoots. If these shoots, or one of them, should be killed or materially injured, suppress the failing one entirely, and cut off the principal branch itself, where it affords the next shoot, thereby making the latter the leading one. On each of these principal branches, or arms, retain a row of *upward* shoots at the distance of about a foot from each other, each of which prune to three, four, or five buds, according to circumstances. Those that are very strong and spring from a vigorous plant, may have a side shoot also left upon them, and sometimes two, one upon each side, with one or two buds each. All the upward shoots, between these that are to be left at a foot's distance must be cut off, as also all downward and lateral shoots.

The same rule for trimming apply to trained vines as to staked ones.

If the espalier, trellis, or wall, be long and high, and there be several vines planted against it, each must be trained in the manner just prescribed.—But that they may not interfere with one another, they need not be permitted to spread so much.—It will be necessary, also, to

give them different degrees of elevation, so that they may be one above another in stories, as it were, and thus each perform its part in covering the trellis.

TO PRESERVE MELONS FROM BUGS.

I have found it almost impossible to raise melons on my ground. and I was much pleased to learn last week, from a person in Northampton, that "melon seed soaked 24 hours in a decoction of tobacco, will be effectually protected from bugs." My informant has so prepared seed for many years, and assured me that it was a complete prevention.

TO MAKE A KITCHEN GARDEN.

"MANY persons, sensible of the utility, are often discouraged from constant attempts in cultivating a kitchen garden, because they have experienced some failures in particular plants. But there will never be a failure of vegetables enough for a family's use, if the following requisites be well guarded:—Richness of soil; due care in the selection of seeds; proper cultivation; and a sufficient variety of vegetables, that if one kind fails, another may be a substitute.

"It is a general complaint among persons who pay only little attention to their garden, that the seed often fail. This usually happens because due care is not taken in discriminating between ripe and unripe seed; between blighted and sound seed. Or in some cases it happens by using old seed instead of fresh. Onion seed

is often used less after the first year; and parsnip seed is so delicate that I believe we can place no confidence in its vegetating principle after having been kept a year. Having generally purchased these more delicate seeds annually, of professed seedsmen, I have rarely failed in any planting. The expense is indeed something, but it is over balanced by the certainty of a growth.

“But our gardens *do not generally present variety enough* to be profitable and convenient to the owner, throughout the whole year, even if all the planting succeeds. There is frequently no provision for the winter, and many a long month, when the vegetable kingdom is locked in frost, is passed with no variety on our tables, to excite the languid appetite, or satisfy that which is pleased with rotation. But surely it is as easy to store our cellars with the *beet*, the *carrot*, the *onion*, the *parsnip*, and *vegetable oyster*, as with the dull monotony of the *potatoe*; and however nutritious the potatoe be, still its utility cannot be hostile to the claims of other productions of the garden.

“We do not invite the plough boy from the utility of his farm, to the *pleasures* of a garden; we do not wish him to sacrifice his grain fields to the culture of a tulip bed; but we wish to call his attention to the *utility, convenience, and economy*, that can be found *in the cultivation of a substantial kitchen garden*, from which his healthful family can draw many of those really innocent luxuries, which a bountiful Providence has, with so lavish a hand, spread around him.”

The above remarks from the Albany Plough-boy well deserve your attention. Let them be impressed upon the tables of your memory, and on your horticultural text-book

Before the end of this month, your inclosures should be completed. Have you brought home the materials? If your fence is to be made of wood, now make ready the posts; they should be large, if you wish them to stand firm and durable. They must be seven feet long, and placed two feet into the earth. If they are only ten feet apart, the girts or rails may be an inch and a half thick, and if they are well framed into the posts, will make a strong inclosure. The lowermost girt must be placed sixteen inches from the surface of the ground, and a bank should be thrown up upon each side, to fill the space. Or, if you have stone upon the farm, make a wall three feet high; let the foundation be laid six inches below the surface; and in the centre of this wall put small posts, into which the girts must be framed. The posts for a fence of this sort, should be five and a half feet long, and sawed an inch and a half thick, six inches wide at the foot, and four at the top. About a foot and a half from the bottom, make a two inch hole, which should be filled with a piece of good timber two feet long. This will greatly strengthen the position of the posts, without weakening the wall. Above the wall, two girts, the one eight, and the other six inches wide, will be amply sufficient. Take care that your wall is laid with art and that the timber is well fitted to it, and it will insure safety to whatever you

may plant in the garden. Or, if you fear depredation from hens, let the girts be perforated with inch holes, and place in them turned pickets, two feet long.

You will need two gates, one of ten feet wide to admit the cart, and the other of three feet for daily use. This should turn with ease, and must be effectually secured by a weight, or you will be liable to much vexation and loss, from carelessness.

Your fence finished, select a proper place for the small kind of fruit shrubs, as gooseberries, currants, and raspberries; for although you admit no trees within this inclosure, these useful shrubs must have a place. They should not be planted around the fences, nor through the centre of the garden, as is too commonly the practice, but in a continued plantation, that they may have suitable attention, and yet not obstruct the plough.

Gooseberries require a deep and rich soil. The ground between the rows must be well manured, and kept free from weeds, and you should be careful to plant none but those that are of a good kind.

A good mode of propagating gooseberries, is by cuttings or layers. For cuttings, take shoots of the last years growth, from shrubs that are known to bear choice fruit. Let them be at least ten inches long; cut off all the buds, except three or four at the tops, and insert the stem six or eight inches into the earth; tread the ground firmly around, and keep them free from weeds. When they have grown here a year or two, they should be removed to the

plantation as soon as the frost is out of the ground in the spring, or in the autumn, which is, particularly for the gooseberry, the best season.

Currants may be propagated in the same way. They are, however, more hardy, and do not require so rich a soil. They should be placed in rows, six or eight feet apart, and kept free from weeds. Between these rows, you may raise a crop of dwarf or bush beans, (take care that there are no runners, or vines among them) without the least injury to the shrubs, for several years.

There is great choice in currants, as well as in other fruit; select only the large red and white currant, for no art will change the original nature of the fruit, although by skilful cultivation, the quality may be improved.

The gooseberry and currant both claim the farmer's attention, and are much wanted in every family. They furnish a cheap and early sauce, and the latter a wine equal to the best Lisbon or Teneriffe.

As you will doubtless wish to plant other trees, and be desirous to know the best season for that work, I would observe as a general rule, that all kinds of trees or shrubs, should be moved or set in the spring, as soon, at least, as the buds begin to swell. The apple tree, the cherry, and plum, will grow, if set with art, when the leaves begin to open, but not with health and vigor.

TO PRESERVE FLOWERS IN WATER.

THE following fact is deserving of record, as an interesting addition to what has hitherto been discovered on the subject of vegetable physiology, and as enabling the lovers of flowers to prolong for a day the enjoyment of their short lived beauty. Most flowers begin to fade after being kept twenty-four hours in water; but all (the most fugacious, such as the poppy and perhaps one or two others, excepted) may be completely restored by the use of hot water. For this purpose—place the flowers in scalding water, deep enough to cover about one third of the length of the stem, and by the time the water has become cold, the flowers will become erect and fresh; then cut off the clodded ends, and put them into cold water.

TO TRANSPLANT IN TIME OF DROUGHT.

DURING dry weather, the gardeners of Paris do not wait for rain as ours generally do; but, as soon as their crops require removing, it is done in the following manner: Having chosen the spot, they well water the top, and immediately dig it under, and afterwards water the fresh surface, and as soon as it is dry enough, it is raked, and the plants put in without any regard to the mid-day sun; they continue to water the bed three or four times a day, until the plants have taken root. It is surprising how soon lettuces, cabbages, ect. will be well rooted by such treatment, and with what vigor they grow after the first shower of rain.—What would have been the state of such plants had they re-

mained in the seed bed? They would have drawn each other; their first leaves would have dropped off, and general debility would have followed, not easy to be removed: but, by the French treatment, not a leaf will be lost. Now, if we consider the principle, it is simply this: that every plant placed in the sun in winter will in no way flag, and the continued wet state of the bed for the few first days is similar to it; besides, the presence of the sun contributes powerfully to the rooting of the plants.

BRIEF HINTS.

It should be remembered that every kind of seed has its requisite degree of heat and moisture, beyond which it will not grow and thrive. Thus the small degree of heat necessary to make parsnip, turnip, and cabbage seed grow will rot cucumber, melon, or squash seeds, and beans; and the state of soil necessary to vegetate the latter, will rot ginkins and some other tropical plants. Most vegetables thrive better to shift the ground alternately every year for different sorts, as each kind draws somewhat different nourishment, on the principle of rotation of crops. Onions, however, are generally considered an exception to the rule

ROLLING OF SEEDS.

It is very important that many kinds of seeds should be rolled in by a heavy roller, or by pressing the earth hard upon them by placing a board on the bed, and walking across it sev-

eral times. Celery, spinage, onions, and many other kinds of garden seeds, will not vegetate, unless the earth is pressed on them hard, or rolled after being sown.

*Short directions for cultivating garden vegetables,
alphabetically arranged.*

Artichokes.—The seeds should be sown early in April, in good rich earth, in drills one inch deep, and twelve inches apart. On the approach of winter, the following spring, in March or April.

Asparagus.—Seeds may be sown early in April, in drills, eight or ten inches apart, the ground being previously well spaded and manured. The beds should, every spring, be well loosened with a three-tined fork.

Attringham Carrot.—A fine, new variety from England, for field or garden culture—sown from April to June 20, in a bed of earth well pulverised.—This carrot grows long and smooth.

Beans.—English dwarfs should be put in the ground early in March; but if the season is late the first of April may answer.

Kidney beans may be planted from April until August, either in hills or drills.

Pole beans are planted from April to June. They are liable to be injured by frost, if planted early.

Beets.—Sow the seed in good mellow ground from April to June, sufficiently thick to admit of being thinned out. This should be done early.

Borecole and Brussels Sprouts—may be managed as cabbages, sown in May, and transplanted in July.

Brocoli.—The early kinds can be sown in April or May, in the open ground, if they have not been sown in a hot-bed, in March.

Broad Leaved Garden Cress.—Sown every fortnight from April to September; an agreeable sallad, and used for garnishing some dishes.

Cauliflower.—In the early part of April, the seeds can be sown in the open ground, and the plants pricked out in May or June.

Cabbage.—Let the seeds of the large early kinds be sown in a warm border about the 1st of April. In May the young plants may be transplanted.

The Savoy and late cabbages should be sown in April, and during the first two weeks in May. Care should be taken to destroy the insects that are apt to infest the cabbages.

Cardoon Artichoke.—In April sow the seed in a bed of rich earth. Thin the plants to four or five inches distance. Transplant them in June, four feet apart. Dress their tops and roots before transplanting.

Carrots.—The ground for this vegetable should have been manured for the previous fall crop. Sow the seeds in April or early in May. Thin out the plants to the distance of five or six inches. This root is much used in England for sheep, cows and horses.

Celery.—For a general crop the seed may be put in a rich mellow bed early in April. As

soon as the plants are two or three inches high, they should be pricked out into a nursery-bed, and in about a month transplanted. The trenches for this transplanting should be spade deep, having the fine dung well mixed with earth at the bottom.

Cress—should be sown in small quantities, every week during spring, in clean rich ground.

Cucumbers—About the first week in May these may be planted in hills, having a little fine manure in the bottom of the holes. To prevent the depredations of insects on the young leaves, sow tobacco dust, soot, or powdered charcoal, around the plants, when they first come up. The first running bud should be cut off, in order to obtain a more stocky growth, and to have lateral shoots for fruitful runners.

Egg Plant.—About the middle of May the young plants should be taken from the hot-bed, and set out in rich warm ground, thirty inches apart. The white kind may be sown in a warm place the last of April.

Endive or Succory.—For early sowing, take the variety, green curled; put the seeds, at different times, into the ground, from April to July. The later they are sown the less likely to run to seed. If they are transplanted, let it be in cloudy weather, or have them immediately watered.

Early scarlet short top Radish—Sown every ten days, from April to Autumn, for summer use. The best sort cultivated

Early York Cabbage.—Sown in February on hot beds—March and April in the open air—

then transplanted into good rich soil. A fine early sort.

Early Turnip Blood Beet.—Sown from April to June. This is the earliest and most delicate beet cultivated for summer use; the tops, also, when boiled, are excellent for greens. It thrives better on light thin soil, than other sorts.

Early large Devonshire Asparagus.—Sown in April and May—in the same manner as onions, in rows 18 inches apart—let it stand one or two years—then transplant into trenches 4 feet wide, dug, if the soil will admit, 15 inches deep—fill up six inches with rotten manure—place the roots fourteen inches apart.

Early Low Dutch Cabbage.—Sowed in hot beds in February; in the open air in April; then transplanted into good rich soil. A very fine early sort.

Early Horn Carrot.—Sown from April to June 20th, in a bed of earth well pulverised. This carrot does not usually grow long nor large, but is peculiarly delicate for the table.

Early Farm Cucumber.—plant from April to June for table use—from June 20 to July 12 for pickles.

Early Russian Cucumber.—Plant on hot beds in March—in the open air 1st of May.

Early Curled Silesia Lettuce.—Sown in hot beds in February and March—in the open air from April to September.

French Sugar Beet.—Sown from April to June; this is a valuable root for the table, or for cat-

tle, and keeps well in the spring. Soak the seed 48 hours in warm water, before planting.

Garden Burnet.—The seeds of this choice salad may be sown early in April.

Leek.—Sow the seed early in April in a bed of rich earth. Transplant last of June in rows, twelve inches apart.

Lettuce.—Sown in April in warm borders, and transplant in May. Coss lettuce should be blanched.

Large Cape Savory Cabbage.—An admirable sort for fall and winter use, of recent introduction. Planted in April and May.

Long Orange Carrot.—Planted from April to June 20th, in a rich loam well pulverised. A valuable root in field culture, for cattle, as well as for the table.

Long Green Turkey Cucumbers.—Planted in hot beds in March, in open air first of May—this is a superior sort for the table.

Melons.—For musk melons, prepare a piece of rich ground, well dug; at the angles of six feet square, make large deep holes, into which put well rotted manure, mixed with earth; cover the dung so as to make broad flat hills; into these put a few seeds, covering them about an inch deep. Pinch off the top of the first runner-bud. Water-melons may be managed in the same way, except that the hills should be at a greater distance.

Mustard.—Sow in April or May, in rich ground. Several kinds are used for salads as well as for seed.

Nasturtium.---The seeds of the running kind should be sown in April or May, in drills near fences, or trellises. The dwarf kind in hills.

New early Savory Cabbage.---Sown in hot beds in March, in the open air in April and May. This is a new variety, of recent introduction from Europe, is very tender, and of uncommon excellence. It heads in July, and is a genuine Savoy.

Nasturtium.---Planted in April and May. Deserving of cultivation on account of its beautiful orange colored flowers, its excellence in sallad, its use in garnishing dishes, and for its seeds, which when young make an excellent pickle. When six inches high, should have sticks placed to climb upon, or be planted by the side of the fences, &c.

Okra.---in the first or second week of May, plant in rich ground, in drills, four feet apart, and two inches deep.

Onions---The best varieties are the Stranburgh and Large Deptford Red The White Portugal and Silver skinned have a milder taste. The seeds may be sown in April broadcast, or in drills twelve inches apart The Welsh onion, *Allium fistulosum*, is cultivated for spring salad. The Potatoe onion is produced by planting the bulb like potatoes.

Parsley.---Sow early in April in drills, an inch deep and twelve inches apart.

Parsnip.---Put the seed in drills early in April, if they have not been in March. The soil should be deep.

Pepper.—Sow the seed in a warm border, the last of April, and then transplant eighteen inches apart; or sow the seed in May, in drills, two feet apart.

Peas.—These may be planted in succession in April and May, in double rows, four feet apart.

Sweet Potatoe.—Plant them in a hot-bed early in April, about three inches deep. When the sprouts are three or four inches above ground, part them from the potatoe, and set them into hills, properly manured, and raised a little above the surface. The seed-potatoe, if left in the ground, will continue for some time to furnish sprouts.

Raddish.—For early raddishes, the seeds should have been sown in a hot-bed in March. To have a succession from the open ground, they should be sown about every ten days, from April until September. To prevent worms from injuring them, Mr. T. Bridgeman recommends salt, at the rate of three bushels to the acre, to be strewed over the ground, and either ploughed or well covered with the spade. If the salt is only harrowed or raked in, the quantity should not be more than one-third. Mr. B found this treatment, last summer, to succeed well.

Horse Raddish.—This is easily propagated from off-sets.

Rocambole.—The bulbs of this plant are considered milder in flavour than those of garlic. They can be raised either from seeds or roots.

The seeds may be sown either in the spring or fall.

Rhubarb.—This valuable plant may be propagated either from off-sets or seeds, put in the ground early in April. The soil should be rich and deep. Every family should have at least a few plants for tarts in March, when scarcely any other green vegetables can be obtained, particularly in the country, among farmers.

Royal Cape Head Lettuce.—Sown in the open air, from April to August—it heads best by transplanting, 12 inches apart each way, on beds of very rich earth.

Rose or Tennis-ball Lettuce.—Sown in hot-beds in February and March—in the open air from April to September. It heads better by transplanting, 12 inches apart each way, on beds of very rich earth.

Salsify.—This is called the vegetable oyster. The seed should be sown early in April, in drills, twelve inches apart. When the plants are a few inches high, they should be thinned out to the distance of six inches.

Scorzonara.—This plant should be managed like the salsify, the carrot, and the parsnip, requiring a deep, rich, and well-pulverised soil.

Sea Kale.—In case they have not been sown in October, the seeds may be put in the ground at the commencement of April. They also may be propagated from pieces of old roots, one or two inches long, planted three or four inches deep. A rich, sandy loam is the proper soil.

Sorrel.—Sow in April and May. Old roots may be separated and planted. This is a good salad either raw or boiled.

Skirret.—This is propagated by seeds and off-sets, managed like parsnips, salsify, &c.

Spinnage.—Sown in rich ground in April. New Zealand Spinnage should be planted in hills. The leaves are fit for use during the whole summer and fall.

Squashes.—Planted in the latter part of April, and treated like melons. Early bush and vegetable marrow are good varieties.

Summer Savory.—Sown on hot-beds in March—in the open air in April and May—an excellent and well known pot herb, of easy culture.

Sage.—Sown on rich soil, in drills, the latter part of April—the next spring after sowing, transplant it two feet apart, into beds of rich earth—it is best to give it some shelter of horse manure and straw during the winter.

Sweet Portuguese Majorum.—This delicate seed should be sown in April and May, on finely pulverized earth, and shaded a few days by a damp mat or rug till it has vegetated.

Tomatoes.—Sow the first week in May, and transplant in June.

Turnips.—This is one of our most valuable vegetables. It is better however, for field than garden culture, succeeding best on land newly cleared, and richly matured. For early garden crop, the seed may be sown in April. Like most other vegetables, they should be frequently hoed.

GENERAL DIRECTIONS FOR FLOWER SEEDS.

PERENNIAL, Biennial, &c. Flower seeds may be sown during the months of April and May, on borders, or on three or four feet wide beds of rich earth, finely pulverised, covered evenly with fine light mould, and in the same manner as annuals. They may be transplanted during the months of August and September, into different parts of the border, for the sake of diversifying the garden. *Scoop trowels*, will be found very useful in shifting of flowers, in general. This work should be done in moist or cloudy weather, if possible, and to give them shade and frequent refreshments of water, till newly rooted. Let them be taken up and transplanted with as much earth as possible about the roots, whether into flower pots or elsewhere. Always observe, when potting flowers, to place a small piece of shell or earthenware over the aperture in the bottom of the pot; it assists the water to drain off, which would otherwise saturate and rot the roots.

It is to be observed, that these kinds do not flower the same year they are sown, but all the sorts of them will flower strong, and in good perfection, the year after. The greater part are sufficiently hardy to stand the winter of the middle and northern states. *Stock Gillyflowers, Wall Flowers, Polyanthus, Scarlet Colutea, Auriculas, Myrtles, and Carolina Jasmine*, will require to be transplanted into flower pots, and housed during the winter in a frame, or warm cellar, where they can be exposed to the light.

Every one may not know the meaning of Perennial and Biennial plants. The Perennials are those which continue on the same root many years, producing new flower stems annually; the Biennials are those of two years' flowers and perfect their seed the next, and soon after die. A continual succession can be kept up by sowing the seeds annually.

TO CULTIVATE HYACINTHS, TULIPS, NARCISSUS, &c.

THE proper soil for bulbs, in general, is a light rich soil, mixed with a considerable portion of fine sea sand; and the compost generally used, is one third fine sand, one sixth rich loam, one third cow dung and one sixth leaves of trees. The two last to be well rotted, and at least two years old; with this mixture, the beds are formed two feet deep, at least, and raised four or six inches above the level of the garden, to turn off rain. The proper time of planting is in the months of October and November, though it may answer by the first of December—provided the ground remains sufficiently open.

Hyacinths may be set six inches apart from each other, and each bulb placed in fine sea sand and covered with it. After the bed is thus planted, cover the whole carefully with earth four inches. When the winter is fairly set in (say from the 1st to the 10th of December) then cover with leaves, straw, or seaweed, four or six inches deep, which should be removed early in the spring; a part of it, perhaps as early as the 20th of February, and the

remainder during March. *With too much protection, the bulbs draw up weak and pale, and are materially injured.* During their bloom, it will be proper to support the bells by small sticks, and protect them from heavy rain and sun. The flower stems should be cut off as soon as they have faded, and the beds left exposed until the leaves are nearly dried, when the bulbs should be taken up, the leaves cut off half an inch from the top of the bulb, and then replaced (side ways) with the fibres on and covered with earth, there to dry gradually for a month; when they are to be taken up, cleaned from the earth and fibres, and each bulb wrapped in a separate paper in a dry place, and frequently aired, or to be packed in dry sand.

*When wanted for the parlor, they should be planted in September, (if to blow early in the winter) in deep narrow pots, six inches in diameter at the top, and about one third deeper than common flower pots. The soil the same as before mentioned, and the bulb to be just covered by it. They should not be watered from the top, but the pots should stand, twice a week, in sausers filled with water. Let them have as much air and sun as possible, and not suffer them to feel the direct influence of the fire—for heat forces the stem out before the bells have time to form and acquire vigor and beauty. When the flowers begin to open, give as much water as the earth will im-
bibe.*

To preserve these bulbs, they should, as soon as the bloom is over, be turned out of the pot with fibres and earth, and put in a

prepared bed in the garden, to be treated afterwards as those growing in open ground. By this mode the bulbs will not be materially injured, and will blow well the second year. Whereas those grown on glass or forced are seldom good for any thing afterwards.

SINGLE HYACINTHS are preferable to most double ones for early flowering in winter; being two or three weeks sooner in bloom. Their colors are more brilliant and the bells more numerous than the double.

TULIPS are hardier than the hyacinth, and in open ground may be planted four inches apart, covered two or three inches with earth.

THE POLYANTHUS NARCISSUS should be planted six inches deep and eight inches apart, and carefully protected from frost, being the most tender of the bulbs. Unless taken up after bloom, it will grow in the autumn and suffer during winter.

Depth and distances. Hyacinths, amaryllis, martagon, and other large lilies, and pæonies, should be planted at the depth of four inches; tulips, double narcissus, jonquilles, colchicums and snow-flakes, three inches; bulbous irises, crocuses, arums, small fritellarias, tiger flowers, gladiolus, and snow drops, two inches; ranunculus, anemones, oxalis, and dog's-tooth violets, one inch; always measuring from the top of the bulb. The rows should be about ten inches apart, and the roots be placed from four to six inches apart in the rows, according to their size.

Method to bloom hyacinths and other bulbs in the winter season, in pots or glasses. For this purpose, single hyacinths, and such as are designated earliest among the double, are to be preferred. Single hyacinths are generally held in less estimation than double ones; *their colors, however, are more vivid, and their bells, though smaller, are more numerous.* Some of the finer sorts are exquisitely beautiful; they are preferable for flowering in winter to most of the double ones, as they bloom two or three weeks earlier, and are very sweet scented. Roman narcissus, double jonquilles, polyanthus, narcissus, double narcissus, and crocuses, also make a fine appearance in the parlor during the winter. It is a remarkable circumstance of the crocus, that it keeps its petals expanded during a tolerably bright candle or lamp light, in the same way as it does during the light of the sun. If the candle be removed, the crocuses close their petals, as they do in the garden when a cloud obscures the sun; and when the artificial light is restored, they open again, as they do with the return of the direct solar rays.

Hyacinths intended for glasses should be placed in them about the middle of November, the glasses being previously filled with pure water, so that the bottom of the bulb may just touch the water; then place them for the first ten days in a dark room, to promote the shooting of the roots, after which expose them to the light and sun as much as possible. They will blow, however, without any sun; but the colors of the flowers will be inferior.

The water should be changed as it becomes impure; draw the roots entirely out of the glasses, rinse off the fibres in clean water, and the glasses well washed inside; care should be taken not to suffer the water to freeze, as it not only bursts the glasses, but often causes the fibres to decay. Whether the water be hard or soft is of no great consequence; but soft or rain water is considered preferable, but it must be perfectly clear. *Forced bulbs are seldom good for any thing afterwards.*

Nosegays should have the water in which their ends are inserted changed, on the same principle as bulbous roots; and a much faded nosegay, or one dried up, may often be recovered for a time, by covering with a glass bell, or cap or by substituting warm water for cold.

To select good garden seeds, and to cultivate them.

1. THE management of a garden (summarily speaking) consists in *attention* and *application*; the first should be of that wary and provident kind, as not only to do well in the present, but for the future; and the latter should be of that diligent nature as (willingly) *never to defer that till to-morrow which may be done to-day.*"

2. Procrastination is of serious consequence to *gardening*; and neglect of times and seasons will be fruitful of disappointment and complaint. It will often happen, indeed, that a gardener cannot do what he *would*; but if he

does not do what he *can*, he will be most justly blamed, and perhaps censured by none more than by himself.

3. *Seed.* "Let your seed be such as you would have your future crop—*the best of the kind.* As the largest animals produce the most profitable stock, so it is in vegetables; the largest seed of the kind, plump and sound, is the best, being well ripened, and kept from injuries of weather and insects.

4. "Commonly speaking, *new* seed is to be preferred to old, as growing more luxuriantly, and coming up the surer and quicker. As to the *age* of seeds; at which they *may* be sown and germinate, it is uncertain; and depends much *how* they are preserved.

5. "Seeds of cucumbers, melons, gourds, &c which have thick horny coverings, and the oil of the seed of a cold nature, will continue good for ten, fifteen, or even twenty years, unless they are kept in a very warm place, which will exhaust the vegetable nutriment in a twelve month; [*three* years for *cucumbers*, and *four* for *melons*, is generally thought to be best, as they shoot less vigorously than new seeds; and become more fruitful.]

6. "Oily seeds whose coats, though they are not so hard and close as the former, yet abounding with oil of a warmer nature, will continue good three or four years, as radish, turnip, rape, mustard, &c. Seeds of umbelliferous plants, which are for the most part of a warm nature, loose their growing faculty in one, or at

most two years, as parsley, carrots, parsnips, &c.

7. "*Peas* and *beans* of two years old are by some preferred to new, as not likely to run to straw. *Sowings* should generally be performed on *fresh* dug or stirred ground. There is a *nutritious* moisture in fresh turned up soil, that softens the seed to swell and germinate quickly, and nourishes it with proper aliment to proceed in its growth with vigour, but which is evaporated soon after from the surface.

8. *Weeding*. "Weeding in time is a material thing in culture, and *stirring* the ground about plants, as also *earthing up* when necessary, must be attended to. Breaking the surface will keep the soil in health; for when it lies in a hard or bound state, enriching showers run off, and the salubrious air cannot enter. Weeds exhaust the strength of the ground, and if they are suffered to seed and sow themselves, may be truly called (as Mr. Evelyn speaks) *garden sins*. The *hand* and *hoe* are the instruments for the purpose.

9. "*Digging* where the spade can go, between the rows of plants is a good method of destroying weeds; and as it cuts off the straggling fibres of roots, they strike fresh in numerous new shoots, and are thus strengthened. Deep *hoeing* is a good practice, as it gives a degree of fertility to the earth.

10 "The *thinning* of seedling crops (such as are designed to produce seed) is a very necessary thing to be done in *time*, before the young plants have drawn one another up too much,

by which they become weak and out of form, and sometimes never do well afterwards. All plants grow stronger, and ripen their juices better, when the air circulates freely round them, and the sun is not prevented from an immediate influence, an attention to which should be paid from the first appearance of plants breaking ground

11. "In thinning *close* crops, as onions, carrots, turnips, &c. be sure they are not left too near; for instead of reaping a greater produce, there would surely be a less. When they stand too close, they will make tall and large tops, but are prevented swelling in their roots: better to err on the *wide* side, for though there are fewer plants they are finer.

12. "In *setting out plants*, be sure to do it as *early* as may be, and always allow room enough for this work; being thus treated, vegetables will come forward sooner, larger, and of a superior flavor. These advantages are seen in all things, but in *lettuces* particularly, which often have not half the room allowed them they should.

13 "Different sorts of plants, intended for the producing of seed, ought not to be suffered to flower together, a caution deserving of attention.—In Ray's history of planting we have the following anecdote: One Richard Baal, a gardener at Brentford, sold a great quantity of cauliflower seed, which he raised in his own garden, to several gardeners in the suburbs of London, who carefully sowed the seed in good ground, but they produced nothing but the common long leaf cabbage; for which reason they

complained they were imposed upon, and commenced a suit against the aforesaid Baal, in Westminster hall.

14. "The judge's opinion was, that Baal must return the gardeners their money, and also make good their loss of time and crops. This cheat we ought not to lay to the poor gardener's charge, for it is wholly to be ascribed to his good plants being impregnated by the common cabbage.

15. "Wherefore, if any one has an excellent cabbage, he ought not to let it flower on the same bed or beside any of an inferior sort, lest the good sort be impregnated with the dust [pollen, prepared in the male flower of plants] of the other, and the seeds produce a degenerate race."

16. *On the choice of seeds.* The way to try the goodness of seed, says Mr. Cobbett, is this, "Put a small quantity of it in *luke-warm* water, and let the water be four or five inches deep. A mug or bason will do, but a large glass tumbler is best, for then you can see the bottom as well as the top.

17. "Some seeds, such as those of cabbage, radish, and turnip, will, if good go to the bottom at once. Cucumber, melon, lettuce, endive, and many others require a few minutes. Parsnip and carrot, and all the *winged* seeds require to be washed by your fingers in a little water and well *wetted* before you put them into the glass; and the carrot should be *rubbed* so as to get off part of the *hairs*, which would otherwise act as the feathers do to a duck.

18. "The seed of the beet and mangel wurtzel are in a case or *shell*. The rough things that we sow are not the *seeds*, but the cases in which the seeds are contained, each case containing from one to five seeds. Therefore, the trial by water is not conclusive as to these two seeds, though if the seed be very good it will sink in water, after being in the glass an hour.

19. "And as it is a matter of such great importance that every seed should grow where the plants stand so far apart; as gaps in roots of beets and mangel wurtzel are so very injurious, the best way is to reject all seeds that will not sink, case and all, after being put into warm water and remaining there an hour.

20. "But seeds of all sorts, are, sometimes, if not always, part sound and part unsound; and as the former are not to be rejected on account of the latter, the *proportion* of each should be ascertained, if a separation be not made. Count then a hundred seeds, taken promiscuously, and put them into water as before directed. If fifty sink and fifty swim half your seed is bad and half is good; and so in proportion as to other numbers of sinkers and swimmers.

21. "There may be plants the sound seeds of which will not *sink*, but I *know* of none. If to be found in any instance, they would, I think, be found in those of the tulip tree, the ash, the birch and parsnip, all of which are furnished with so large a portion of wing. Yet all these, if *sound*, will sink, if put into warm water, with the wet worked a little into the wings first. I incline to the opinion, that we should

try seeds as our ancestors tried witches; not by fire, but by water; and that following up their practice we should reprobate and destroy all that do not *readily* sink."

TO PREVENT WORMS IN PEACH TREES.

FROM a desire to encourage the culture of the Peach Tree, we offer the following as the result of experiment and observation.

It is generally known that worms, near the surface of the earth, destroy them by eating the bark; the object is therefore to find a preventive, in order that the trees may become aged in a healthy state.

It is evident that these worms pass through the common change, and assume the form of MILLERS, early in the summer, and deposit their eggs in the bark as low as they can find access to it; and that the worms proceeding from them, begin to operate in the latter part of the summer, when they have been found the size of a common pin. If suffered to remain, they grow to the thickness of a rye straw, each of them girdles the tree about an inch, and the wood from the wound to the heart dies. Hence it is, that a single wound impairs the vigor of the tree and a number kill it. The point to be gained, is to protect the tree from the millers, and by a simple method, we have succeeded for several years, which is recommended with full confidence.

About the first of May remove the earth from the body of the tree, and shift it to the

height of 15 or 16 inches, in such manner as to exclude the millers, burying the lower part of it in the earth. We have used straw cut to the length and about half an inch in thickness, bound on with twine. This should be removed about the first of September, as we have sometimes found the young worms in the upper part of the straw, being then readily discovered on the surface of the bark, covered by a little gum. The process should be commenced when the tree is young—they have been found in a rapid growth the first fall after it sprouts. Thus a few minutes in a year devoted to a tree, will protect it against this cause of decay—a very trifling expense compared with the value of this healthy and delicious fruit.

TO PRUNE PEACH TREES.

WHEN trees are pruned in the winter, by the action of the sun and air upon the parts cut, the wood to a small distance becomes dried, with the bark firmly attached to it, and all circulation of the sap perfectly suspended. It requires some years more or less, according to the size of the limb, before the young wood can break through the old bark in order to cover the wound. Never prune until the sap begins to circulate freely in the spring or until the trees are in leaf. At this time the bark is loose from the wood, and the elaborated juice of the tree will be seen projecting from between the bark and wood, forming a lip,

which is covered with a thin bark which continues to extend and soon covers the wound.

As to nurseries, when you approach them be careful to keep your knife in your pocket. There have been nine nurseries spoiled by over pruning to where one ever suffered from want of it. I know that it is easier work to prune a small tree than to dig about it. Who of you would ever think of fattening your horse by brushing without feeding him or that he could digest his food without a stomach? But it would be equally natural to trim and brush him after he was in flesh, before taking him to market. So with trees. Many of the elements of nutrition are taken up by the roots; but the leaves are as essential to the elaboration of those elements as the stomach of a horse is to the digestion of the food—without those either would perish; but when trees have attained a sufficient size for sale, it is well to give such pruning as may give a desirable shape to the tops, and this should be done one year before transplanting.

CALENDARIAL INDEX FOR GARDENERS

*Giving directions for managing gardens in every month
of the year.*

THE object of this Calendar is merely to give brief intimations of work to be performed in a garden, together with some approximation to the time of year in which it should be accomplished.

No precise time can be fixed which will suit the climate in all the states. These directions

are intended for the Western States and particularly about the latitude 40° N. Allowance can be made for elevation of site, as well as for situation North or South of that degree, but it is not possible, perhaps to state what that allowance should be with any degree of precision. The nature of the soil, the aspect, the exposure, the forwardness or backwardness, or what may be styled, the general character of the season, are all to be regarded; and require the exercise of a sound *discretion* in the cultivation not to be restricted by general rules which are not liable to too many exceptions to be noted in this work.

JANUARY.

THE temperature of the climate at this season of the year is such as to exclude the cultivator from performing most of the operations of Horticulture, but the seeds of Knowledge may be sown in winter, and the Horticulturist may cultivate his mind when his soil is bound in frozen fetters.

Provide a sufficient quantity of bean-poles, and pea-rods.

Many people who neglect to procure these implements in season are induced by the hurry of business, to permit their peas and beans to trail on the ground, in which situation they will not produce, especially the tall growing sort, one third part so many as if they were properly supported by poles and rods.

Preparations may now be made for forcing Cucumbers and Melons.

FEBRUARY.

MANURE may be carried on those places where it is needed, and should be left in heaps. Rake together and burn the stubble or whatever may remain from the last crop. Fences should be inspected and repaired if necessary. Straw mats for hot-beds, poles, rails, lattices for espalier trees, should be prepared. See that your garden tools are in good order and procure such new ones as may be necessary.

It is now time to set about procuring and preparing materials for and forming hot-beds. Clean trees from moss, and protect them against mice by whitewashing with lime near the roots. Enter in earnest into the business of forwarding various kinds of seedling plants, by artificial means, so that they may have strong roots, and arrive at some size by the time they would naturally make their first appearance above ground. Attend to your fruit in your fruit room or cellar, on shelves or in boxes, and if necessary, pick it over and cull out whatever is defective; wipe the remainder dry, and pack it away anew. If it is put down in some sort of grain, dry sand, flax seed, chaff or what is best of all pulverised plaster of Paris, it will not require further attention. Now begin to force Asparagus in hot-beds if you would have it early. Sow under glass cases for transplanting or otherwise, radishes, carrots, small sallads, peas, beans &c.

Protect choice plants, which may show a dispositon to vegetate, by matting, litter, or other proper means for protecting them.

MARCH.

LETTUCE may be sowed in the open ground as soon as the frost is out. It may be sowed between vacant rows, intended for other plants, and pulled out for use before the other plants are large enough to be encumbered by it.

Early Peas cannot be planted too soon after the ground is thawed. Radishes may be sowed as soon as the seed can be raked in. Sow cabbages, cucumbers, melons, cauliflowers, squashes, in hot-beds under glasses &c.

Dig up vacant ground and apply manure where it is necessary. Dress borders, and clean or relay gravel walks. Attend to and turn over compost beds, dress Asparagus beds or make new ones about the middle of this month. Select from the cellar the best cabbages with heads, and set them in some proper place to stand for seed, set the different kinds remote from each other to prevent their mixing at the time of flowering.

Likewise you may set some of your cabbage stumps for early salad and greens. If the ground is moist, set shallow; if dry place them about 6 inches deep. Small salad such as cresses, mustard, radish &c. when a constant supply is wanted, should be sown as often as once in a week or fortnight.

Celery for an early crop may be sown in this month.

APRIL.

WHERE the ground is somewhat moist and heavy in the Middle and Western states this

is the month for sowing the principal crops. Sow the hardy kinds as soil, site and season will permit, that the plants may be firmly established before they are over taken by the heat and drought of summer, but a stiff and moist soil should never on any account be dug, ploughed, or harrowed when it is so wet as to be clammy and adhesive. On the other hand a light sandy soil will be meliorated by being hoed, or otherwise wrought on while moist.

(See directions for cultivating garden vegetables Page 103).

MAY.

WEED and thin your advancing crops of radishes, transplant radishes for seed. Weed and thin beats, carrots, parsnips, onions, early turnips &c. Early cauliflower plants as they advance in growth should have earth drawn up about their stems, and be watered in dry weather. Now is perhaps as proper a time for pruning fruit trees as any in the year. The season for pruning is immediately before or commensurate with the rising of the sap. Attack insects at this time according to the recipes given in the preceding pages. Soap-suds, decoctions of tobacco, and of elder, are said to be good preventives against insects.

JUNE.

MELONS and cucumbers, which have hitherto been protected by glasses or paper frames may now be exposed to the open air. If the season be at all dry, your vegetables, particularly

your cucumbers, will need water. Keep your crops clean by hand weeding and hoeing. Thin melon plants leaving only two or three in a hill. Attend to cabbage and cauliflower plants as well as beans and see that they are not destroyed by the cut worm. If you perceive any plants injured, open the earth at the foot of the plant and you will seldom fail to find the worm at the root within four inches. Kill him and you may save not only the other plants of your garden but probably many thousands in future years. Hoe and bush your late peas. Thin out and earth up all your plants; remember that frequent hoeing is as good as manure and water to your vegetables in dry weather. Celery planted out in trenches; when the plants have grown to the height of 8 or 10 inches draw earth about them breaking it fine. This should be done in dry weather being careful not to bury the heart. Plant out cauliflowers, Cabbages, Brocoli &c. in moist cloudy weather but not when the ground is wet and heavy, look over your grafted trees, and you may ascertain whether the scion has united with the stock. Take off the clay, and loosen the bandages of such grafts as have succeeded. Rub off all superfluous, irregular, or ill placed shoots or suckers. Where your fruit trees appear to be overloaded with fruit pick off a part and carefully gather all that which has fallen and give to your swine in order to destroy the Curculio.

JULY.

CLEAR and prepare your ground where your early crops of peas, spinage, cauliflowers and cabbages grow, and all other vacant spots, to

cultivate thereon such plants as are proper to supply your table in autumn and winter, with later grown productions. You may continue to sow crops of small salading every eight or ten days; but they should now be sown on shady borders, or else be shaded by mats, occasionally, from the mid-day sun, and frequently watered both before and after the plants appear above ground. You may now plant out your celery plants in trenches, unless you have already performed that operation, as directed last month. About the middle of July, and from that time to the end of the first week in August you may sow turnips. Thin and transplant such lettuces as were sown last month, and sow more lettuce seed in the beginning, middle, and last week of this month, in order to have a constant supply for the table. Sow likewise radishes, and in the last week of this month a good crop of spinach may be sown for autumn use; it will not then be so liable to run to seed as in the preceding months. It is a good practice to sow early kinds of cabbages about this time, for a supply of young greens during autumn. Collect all kinds of seeds as they come to maturity, cutting off or pulling up the stems with the seeds attached as they ripen. Spread them in some airy place under cover, turning them now and then, that the seeds may dry and harden gradually, and be careful not to lay them so thick as to hazard them heating and fermenting. When they are sufficiently dry, beat out and clean the seeds, and deposite them in bags or boxes till wanted. Give water to such plants.

as require it, but let this be always done in the evening, that it may be of use to the vegetables before the sun shall cause it to evaporate.

You may now inoculate or bud your fruit-trees, and, where it can be done without inconvenience, it will be well to turn swine into your orchard to eat the fallen and decayed fruit, and thus destroy the insects which it contains. If, however, this cannot well be done, or you have not swine in sufficient number to devour all your fallen fruit, it will be well to gather and carry it from the ground before the insects, which inhabit it, make their way into the earth, and make you destructive visitations another season.

AUGUST.

KEEP all your crops clear from weeds, using the hoe where safe and convenient; otherwise make claw-hoes of your hands, and weed-extracting nippers of your thumb and fore-fingers. Pull up the haulm of peas, beans, &c., and remove it to the compost bed; bury it between rows of plants, or throw it together with all weeds, &c. to your swine, that your premises may have a neat appearance. Cut such herbs as are now in flower, to distil, or to dry for winter use, being careful to do it when they are dry, and spread them in a dry, shady place; for, if they are dried in the sun, they will shrink very much, turn black, and prove of little value. Your dung-hills and compost-beds should, during the summer months, be kept free from weeds; for if the seeds are permitted to ripen and fall, the dung, when carried into the gar-

den, will disseminate weeds innumerable. Attend to plants set out for seed, and put stakes to such as need support. This month as well as the latter part of July, is the proper season for inoculating or budding. M'Mahon says, "Cherries, plums, or any other fruit-trees, may be budded in August, if the bark parts freely from the stock. Pears ought to be inoculated the early part of the month, or while the sap flows freely; but the peach, nectarine, almond, and apple, will succeed any time between the first of August and twentieth of September, provided the stocks are young and vigorous."

Preserve peach, plum, cherry, and apricot stones, &c. to sow for raising stocks to bud and graft on. These may either be sown immediately, or kept in common garden earth or moist sand. But it will be necessary to sow them before the stones open, and the radicles begin to shoot; otherwise many of them will be broken or torn in the process of sowing. Every day they are kept out of ground is an injury to them; and if they remain in a dry state till spring, very few will vegetate till a year after, and the greater number not at all. Continue to collect and preserve seeds as directed last month. Sow onions to stand over winter; likewise, cauliflowers.

SEPTEMBER.

Hoe and thin your growing crops of spinach. In the first week of this month, sow a full crop of prickly-seeded kind for winter and spring use. And, at the same time, you should sow a good supply of early short-top, white and

red turnip-rooted and salmon radishes. Earth up celery as it advances in growth, but be careful to avoid covering the hearts of the plants. This work should be done in a dry day. See that you do not bruise or injure the stalks; for if they are crushed or wounded, they will be subject to rot. Gather all kinds of seeds as they ripen, which may be necessary for the ensuing season. Towards the latter end of the month, you may safely transplant all kinds of hardy perennial, aromatic, and medicinal herbs, which will thus become well rooted before winter. This work should, if possible, be done in moist weather. Pull and preserve your ripe onions, and sow more to stand over winter. Protect your grapes and other fruit against wasps. This may be done by hanging up phials of honied or sugared water near the fruit you wish to defend from their attacks, in which many of the tiny depredators will be caught and destroyed. Thoroughly clean from weeds all your seed-beds and young plantations of trees, shrubs, &c. Gather cucumbers and mangoes for pickling before they spot. Sow cauliflowers about the 20th.

OCTOBER.

THE young cabbage plants, produced from seed sown last month, and intended for early summer cabbages, should be transplanted into the beds in which they are to remain during winter.

Prepare a bed for them, the width of your garden frame, in a warm, well sheltered place, where the sun has the greatest power; yet be

careful never to admit the direct sunshine on the plants, when in a frozen state. When you have no glasses, the plants may be protected during winter by boards or mats, giving them air in mild weather. Cauliflowers sown in August or September should be raised carefully, and protected, during the cold season, in garden frames, with boards, mats, &c., or perhaps some may survive if set in open borders, or they may be set in pots. Weed and thin your late crops of spinach, leaving the best plants at the distance of three, four, or five inches asunder. Early in the month, hoe and earth up the late-planted crops of cabbages, broccoli, and borecole, cauliflowers and other plants of the brassicagenus. Towards the end of the month, if the stalks of asparagus turn yellow, cut them close to the earth; clear the beds and alleys from weeds, and carry them with the stalks off the ground. It will then not be amiss to cover the beds and alleys with litter, well trodden down, to be removed in the spring. Or you may apply manure now, instead of in the spring. Cut down all decayed flower stems and shoots of the various kinds of aromatic, pot and medical herbs, close to the plants; clear the beds from weeds and litter, and carry the whole off the ground. Onions may now be planted out to raise seed, instead of setting them in the spring. The seeds of dill, skirret, rhubarb, sea-kale, may now be sown; for, if kept out of ground till spring, many of them will not vegetate till a year after; but when sown in October or November, if the seeds are fresh and perfect, they will vegetate in the April follow-

ing. Begin to take up and secure potatoes, beets, carrots, parsnips, turnips, Jerusalem artichoke, &c. Give a general hoeing and weeding to all your crops, and carry the weeds out of the garden. Such spaces of ground as are now vacant should be dunged, dug, or trenched, and thus have the advantage of a winter fallow, and that exposure to frost, which will reduce it to fine tilth, and destroy worms, the larvæ of insects, &c. The old beds of strawberries should, some time in this month, be cleaned from weeds, and the vines or runners be taken off close to the plants. Then, if there be room, loosen the earth to a moderate depth between the plants, taking care not to disturb the roots. And if the plants are in beds with alleys between, line out the alleys, and let them be dug a moderate depth, breaking the earth very fine, and spreading sufficiency of it over the beds, between and round the beds, taking care not to bury their tops. A slight top dressing of compost may now be applied. It may now be time to gather and preserve apples and pears, though it is best to let them remain on the trees as long as they are safe from frost. If you are not apprehensive of the depredations of mice, rats, squirrels, &c. you may sow the stones of plums, peaches, nectarines, apricots, &c.; or you may, if you think it more prudent, preserve them in sand till March or April.

NOVEMBER.

GATHER from your garden, before the hard frosts commence, all those fruits of your labours, which you wish to preserve through the

winter, not forgetting winter squashes. Take up and preserve cabbages. Preserve your celery. You may gather a part in dry weather, and pack it in boxes in dry sand, and place the boxes in a warm cellar, leaving the tops and leaves open to the air. Those cabbage and cauliflower plants, which you mean shall stand through the winter in frames, should, during the continuance of mild weather, be allowed every advantage of free air, to inure them, by degrees to bear cold. Take the glasses off entirely, in the warm part of the day, but place them on again at night, and in wet or cold weather. If your beets, turnips, parsnips, &c. are not secured, take them up, and preserve them, as directed last month. You may now sow the seeds of rhubarb, sea-kale, skirrets, parsnips, and many other kinds, which are somewhat slow in vegetating, and they will come forward early, and grow vigorously in the spring. In the beginning of this month, you may manure and trench the ground which is intended for early crops, and, if it be of a stiff, heavy nature, lay it up in ridges, to receive the benefit of the winter frosts. You may now sow early peas, to come up in the spring, if you can preserve them against mice. This is perhaps, as eligible a period as any for the planting of apple-trees, and other fruit-trees, or sowing seeds in a nursery. Lay light litter of some kind, a good thickness, over the roots of the more tender and choice kinds of trees and shrubs, to protect them from frost.

DECEMBER.

THE severity of the weather in this month generally allows but little to be done. Should the season permit, you may perform any of the operations directed for last month, which remain unfinished. If the weather continues open carry out and spread manure, and trench the ground, as directed for the last month. Provide from the woods, &c. pea-sticks and bean-poles, of suitable length and sizes, as directed in January. Collect all your old sticks and poles, which are still fit for use, and place them together with your new ones under cover, to prevent their rotting. Be careful to shut the frost out of the apartments in which you have stored your fruit for winter and spring use. Examine the fruit which you have on shelves in cellars, once every ten days, and take away any that you find tainted. Repair all decayed trellises, espaliers, &c. Procure stakes and other materials which may be wanted in a more busy season.

BREWERY.

TO BREW ALE IN SMALL FAMILIES.

A bushel and 3 quarts of ground malt and a pound of hops are sufficient to make 18 gallons of good family ale. That the saccharine matter of the malt may be extracted by infusion without the farina, the temperature of the water should not exceed 155 or 160 deg. Fahrenheits thermometer. The quantity of water should be thrown on the malt as speedily as possible, and the whole being well mixed together by active stirring, the vessel should be closely covered over for an hour. If the weather be cold, for an hour and a half. If hard water be used it should be boiled, and the temperature allowed by exposure to the atmosphere to fall to 155 or 160 degrees Fahrenheit. But if rain water is used, it may be added to the malt as soon as it comes to 155 degrees. During the time this process is going on the hops should be infused in a close vessel in as much boiling water as will cover them for ten hours. The liquor may then be squeezed out and kept closely covered.

The hops should then be boiled for about ten minutes in double the quantity of water obtained from the infused hops, and the strain-

ed liquor when cold may be added with the infusion to the wort when it has fallen to the temperature of 70 degrees. The object of infusing the hops in a close vessel previously to boiling is to preserve the essential oil of the hop which renders it more sound and more healthy.—A pint of good thick yeast should be well stirred into the mixture of wort and hops and covered over in a place of the temperature of 65 degrees Fahrenheit, and when the fermentation is completed the liquor may be drawn off into a clean cask previously rinsed with boiling water.

When the slow fermentation which will ensue has ceased, the cask should be loosely bunged for ten days when if the liquor be left quiet the bung may be properly fastened. The pale malt is the best, because when highly dried it does not afford so much saccharine matter. If the malt be new it should be exposed to the air in a dry room for two days previous to its being used; but if it be old it may be used in 12 or 20 hours after it is ground. The great difference in the flavor of ale made by different process appears to arise from their employing different species of hops.

ANOTHER METHOD OF BREWING ALE.

For 36 gallons take of malt (usually pale) 2½ bushels, sugar 3 pounds, just boiled to a colour, hops 2 pounds 8 ounces, coriander seed one ounce, capsican one drachm.

Work it 2 or 3 days, beating it well up once or twice a day; when it begins to fall cleanse

it by adding a handful of salt and some wheat flour.

CHEAP AND AGREEABLE BEER.

TAKE 15 gallons of water and boil one half putting the other into a barrel, add the boiling water to the cold with one gallon of molasses and a little yeast. Keep the bung hole open till the fermentation is abated.

TO MAKE SUGAR BEER.

VERY excellent beer is made of sugar, and of molasses. First boil a peck of bran in 10 gallons of water, strain the bran off and mix with the branny water 3 pounds of sugar first stirring it well. When cold enough add a tea spoonful of the best yeast, and a table spoonful of flour to a bowl nearly full of the scharine matter, which, when it has fermented for an hour is to be mixed with the remainder and hopped with about a half pound of hops, and the following day it may be put into the cask to ferment further, which generally takes up 3 days when it is to be bunged and it will be fit for drinking in a week. Molasses beer is made in the same way, 3 pounds of it being used instead of 3 pounds of sugar.

N. B. This Beer will not keep long.

SPRUCE BEER.

BOIL 8 gallons of water and when in a complete state of ebullition (Boiling) pour it into a

beer barrel which contains 8 gallons more of cold water; then 16 pounds of molasses with a few table spoons full of the essence of spruce, stirring the whole well together; add half a pint of yeast and keep it in a temperate situation, with the bung half open for 2 days till the fermentation be abated, when the bung may be put in and the Beer bottled off. It will be fit to drink in a day or two. If you can get no essence of spruce, make a strong decoction of the small twigs and leaves of the spruce.

TO MAKE BEER AND ALE FROM PEA SHELLS.

No production of this country abounds so much with vegetable saccharine matter as the shell of green peas.

A strong decoction of them so much resembles in order and taste an infusion of malt (termed wort) as to deceive a brewer. This decoction rendered slightly bitter with the wood sage and afterwards fermented with yeast, affords a very excellent beverage.

THE METHOD EMPLOYED IS AS FOLLOWS.

FILL a boiler with the green shells of Peas, pour on water till it rises half an inch above the shells and simmer for 3 hours; strain off the liquor and add a strong decoction of the wood sage or the hop so as to render it pleasantly bitter, then ferment in the usual manner. The wood sage is the best substitute for hops and being free from any anodyne property, is entitled to all preference. By boiling a fresh quantity of shells in the decoction before it be-

comes cold it may be so thoroughly impregnated with saccharine matter as to afford a liquor, when fermented, as strong as ale.

REQUIRED TIME FOR RIPENING BEER.

THIS depends on the temperature at which the malt has been made, as under malt made at 119 degrees will produce beer which may be drawn in a fortnight at 124 degrees, in a month at 129 degrees, in 3 months at 134 degrees, in 4 months at 138 degrees, in 6 months &c.

TO FINE BEER.

TAKE an ounce of Isinglass, cut small, and boil it in 3 quarts of beer till completely dissolved, let it stand till quite cold, then put it into a cask and stir it well with a stick. The beer so fined, should be tapped soon, because the isinglass is apt to make it stale as well as fine.

Another.

TAKE a pail of water and half an ounce of unslaked lime. Mix them well together, letting the mixture stand for 3 hours, that the lime may settle at the bottom. Then pour off the clear liquor and mix with a half an ounce of isinglass, cut small and boiled in a little water. Pour it into the barrel, and in five or six hours the beer will become fine.

TO ENLIVEN AND RESTORE DEAD BEER.

Boil some water and sugar, or water and molasses together, and when cold add some new yeast; this will restore dead beer or refine bottled beer in 24 hours, and it will also make worts work in the tub if they are sluggish. Or a teaspoonful of carbonate of soda, may be mixed with a quart of it as it is drawn for drinking; or boil for every gallon of the liquor 3 ounces of sugar in water, when cold add a little yeast, and put the fermenting mixture into the flat beer, whether it be a full cask or at the bottom of the cask. Or beer may often be restored by shaking the cask for a considerable time, which will create such new fermentations as to render it necessary to open a vent to prevent the cask from bursting.

TO GIVE BEER A RICH FLAVOUR.

Put six sea biscuits into a bag of hops and put them into the cask.

TO SWEETEN MUSTY CASKS.

Make a strong ley of ash beach or other hard wood ashes, and pour it boiling hot into the bung hole, repeating it as often as necessary. Or fill the cask with boiling water, and then put into it some pieces of unslaked lime; keeping up the ebullition for half an hour. Then bung it down and let it remain until almost cold, then turn it out. Or unhead the cask, swab it out, head it again, put powdered char-

coal into the bung and two quarts of a mixture of oil of vitrol and cold water; then bung it tight and roll and turn the cask for some time, afterwards wash it well and drain it dry.

LONDON COOPERS MODE OF SWEETENING CASKS.

It is their system to take out the head, place the cask over a brisk fire and char the inside completely; the head is then put in again and the cask before used is filled 2 or 3 times with hot liquor, bunged down and well shaken before it is used.

TO BOTTLE TABLE BEER.

As soon as a cask of beer is received into the house it is drawn off into quart stone bottles with a lump of white sugar in each, and securely corked. In 3 days it becomes brisk; is equal in strength to table ale, remarkably pleasant, very wholesome and will keep many months.

TO REMOVE TASTENESS IN BEER.

Put a tea-spoon full of carbonate of soda into a quart of tart beer, and it will be pleasant and wholesome

TO RENDER BOTTLED BEER RIPE.

THE following method is employed in Paris by some venders of bottled beer, to render it

what they term ripe. It is merely by adding to each bottle 3 or 4 drops of yeast, and a lump of sugar as large as a nutmeg; in the course of 24 hours by this addition, stale or flat beer is rendered most agreeably brisk. In consequence of the fermentative process that takes place in it, a small deposit follows, and on this account the bottles should be kept in an erect position—by this way white wine may also be rendered brisk.

TO KEEP HOPS FOR FUTURE USE.

Hops loose all their fine flavor by exposure to the air and damp. They should be kept in a dry close place and lightly packed.

TO MAKE GINGER BEER.

“THIS when well made, is one of the most agreeable, as well as one of the most wholesome beverages that can be imagined. The subjoined recipe for producing it in high perfection may be found useful during the summer months. Take one and a half ounces of ginger, well bruised, one ounce of cream of tartar, and a pound of white sugar. Put these ingredients into an earthen vessel, and pour upon them a gallon of boiling water; when cold, add a table spoon full of yeast, and let the whole stand till the next morning, then skim it, bottle it, and keep it three days in a cool place before used.”

TO MAKE GINGER BEER POWDERS.

TAKE 5 scruples of loaf sugar, powdered, 5 grains ginger, 25 grains sub-carbonate of soda; mix and fold in a blue paper.

Then take 30 grains tartaric acid, powdered. Fold this in white paper, for distinction. They are sufficient to make half a pint.

TO MAKE SPRUCE BEER.

PUT 4 gallons of boiling water into a tub or cask with 4 gallons of cold water, by which you will get the proper degree of heat; then add 8 pounds of molasses, and two or three table spoons full of the essence of spruce; stir them thoroughly together, and add a quarter of a pint of good yeast. It is now to be kept in a temperate situation till the fermentation is somewhat abated (which will be in about 48 hours) and then bottle off, when in two days it will be fit for use.

TO MAKE NECTAR.

PUT half a pound of loaf sugar into a large porcelain jug; add one pint of cold water; bruise and stir the sugar till it is completely dissolved; pour over it half a bottle of hock and one bottle of madeira. Mix them well together, and grate in half a nutmeg, with a drop or two of the essence of lemon. Set the jug in a bucket of ice for one hour.

TO MAKE GOOSEBERRY WINE.

WHEN the weather is dry, gather gooseberries about the time they are half ripe; pick them clean, put the quantity of a peck into a convenient vessel, and bruise them with a piece of wood, taking as much care as possible to keep the seeds whole. Now having put the pulp into a canvass bag, press out all the juice; and to every gallon of the gooseberries add about three pounds of fine loaf sugar: mix the whole together by stirring it with a stick, and as soon as the sugar is quite dissolved, pour it into a convenient cask, which will hold it exactly. If the quantity be about 8 or 9 gallons, let it stand a fortnight; if 20 gallons, 40 days, and so on in proportion; taking care the place you set it in be cool. After standing the proper time, draw it off from the lees, and put it into another clean vessel of equal size, or into the same, after pouring the lees out, and making it clean; let a cask of ten or twelve gallons stand for about three months, and twenty gallons for five months, after which it will be fit for bottling off.

TO MAKE WHITE AND RED CURRANT WINE.

TAKE of cold soft water, 12 gallons; white currants, 4 do.; red currants, 3 do. Ferment. Mix raw sugar, 25 lbs.; white tartar, in fine powder, 3 oz. Put in sweet briar leaves, 1 handful; lavender leaves, 1 do.; then add spirits, 2 quarts or more, this will make 18 gallons.

TO MAKE DUTCH CURRANT WINE.

TAKE of cold soft water, 9 gallons; red currants, 10 do. Ferment. Mix, raw sugar, 10 lbs.; beet root, sliced, 2 lbs.; red tartar, in fine powder, 2 oz. Put in bitter almonds, 1 oz.; ginger, in powder, 2 oz.; then add brandy, 1 quart. This will make 18 gallons.

TO MAKE RASPBERRY WINE.

GATHER the raspberries when ripe, husk them and bruise them; then strain them through a bag into jars or other vessels. Boil the juice, and to every gallon put a pound and a half of lump sugar. Now add whites of eggs, and let the whole boil for fifteen minutes; skimming it as the froth rises. When cool and settled, decant the liquor into a cask, adding yeast to make it ferment. When this has taken place, add a pint of white wine, or half a pint of proof spirit to each gallon contained in the cask, and hang a bag in it containing an ounce of bruised mace. In three months, if kept in a cool place, it will be very excellent and delicious wine.

TO MAKE BIRCH WINE.

THE season for obtaining the liquor from birch trees, is in the latter end of February, or the beginning of March, before the leaves shoot out, and as the sap begins to rise. If the time is delayed, the juice will grow too thick

to be drawn out. It should be as thin and clear as possible. The method of procuring the juice is by boring holes in the trunk of the trees, and fixing faucets of elder; but care should be taken not to tap in too many places at once, for fear of injuring the tree. If the tree is large, it may be boared in five or six places at once, and bottles are to be placed under the aperture for the sap to flow into. When four or five gallons have been extracted from different trees, cork the bottles very close, and wax them till the wine is to be made, which should be as soon as possible after the sap has been obtained. Boil the sap, and put four pounds of loaf sugar to every gallon, also the peel of a lemon cut thin; then boil it again for nearly an hour, skimming it all the time. Now pour it into a tub, and as soon as it is almost cold, work it with a toast spread with yeast, and let it stand five or six days, stirring it twice or three times each day. Into a cask that will contain it, put a lighted brimstone match, stop it up till the match is burnt out, and then pour the wine into it, putting the bung lightly in, till it has done working. Bung it very close for about three months, and then bottle it. It will be good in a week after it is put into the bottles.

ANOTHER.

BIRCH wine may be made with raisins, in the following manner: To a hogshead of birch-water, take four hundred of Malaga raisins: pick them clean from the stalks, and cut them small. Then boil the birch liquor for one hour at least, skim it well, and let it stand till it be no

warmer than milk. Then put in the raisins, and let it stand close covered, stirring it well four or five times every day. Boil all the stalks in a gallon or two of birch liquor, which, when added to the other, when almost cold, will give it an agreeable roughness. Let it stand ten days, then put it in a cool cellar, and when it has done hissing in the vessel, stop it up close. It must stand at least nine months before it is bottled.

APRICOT WINE.

Boil together three pounds of sugar, and three quarts of water; and skim it well. Put in six pounds of apricots pared and stoned, and let them boil till they become tender. Then take them up, and when the liquor is cold, bottle it. After taking out the apricots, let the liquor be boiled with a spring of flowered clary. The apricots will make marmalade, and be very good for present use.

APPLE WINE.

To every gallon of apple juice, immediately as it comes from the press, add 2 lbs. of common loaf sugar; boil it as long as any scum rises, then strain it through a sieve, and let it cool; add some good yeast, and stir it well; let it work in the tub for two or three weeks, or till the head begins to flatten, then skim off the head, draw it clear off, and turn it. When made a year, rack it off, and fine it with isinglass; then add half a pint of the best rectified

spirits of wine, or a pint of French brandy, to every 8 gallons.

SIMPLE BEVERAGES.

NEXT to simple water, or sugared water, we should prefer milk, milk and water, or butter-milk. When the latter is found to agree well with the stomach it constitutes one of the most wholesome, cooling, and refreshing of our drinks. It should, however, be perfectly fresh, and obtained from milk, the whole of which has been employed in making butter, and not the cream only. Whey, also, when it can be procured in sufficient quantities, is a very appropriate drink, which the ancients, it is said, were in the habit of using to a considerable extent.

The soda, or artificial mineral water of the shops, constitutes a pleasant and innocent drink, well calculated to allay thirst. It should not, however, be taken too cold—in large quantities at a time, nor immediately before or after a meal. At such times, the fixed air with which the water is charged, by distending the stomach, will be very apt to interfere with the complete digestion of the food. The question so frequently asked, whether this mineral water should be taken plain, or with syrup? is one which does not deserve a serious consideration—it is best decided by a reference to the taste of each individual.

A very customary drink during the summer, with many individuals, is claret, or claret and water. Against a moderate quantity of pure claret largely diluted with water, though

certainly less appropriate than the latter by itself, we have little to object: but "the villainous compound," ordinarily vended under the appellation of "cheap claret," is very little better than an absolute poison, from the use of which the stomach invariably suffers.

Ale, porter and water, or porter sangaree, constitutes a considerable item in the daily beverage of a large class of our citizens. When of good quality, and drunk sparingly, malt liquors seldom do much harm, at least in individuals accustomed to sufficient exercise, or in whom the stomach is not debilitated, or already labouring under disease. There is one set of persons, however, who if they value their safety, must abstain religiously from their use; we allude to such as are inclined to corpulency, with short necks, and large prominent veins. With such a constitution, drinking malt liquors, or indeed any thing but water, is pretty much the same as inviting an attack of apoplexy.

TO MAKE EXCELLENT CHEAP WINE.

To six gallons of new cider, add two gallons of brandy, or in that proportion. Let the brandy be well mixed with the cider, and the cask be kept full by filling up, during the fermentation. At the end of six or eight weeks, you will have a liquor, which will not cost more than twenty-five cents by the gallon, possessing much the taste and sensible qualities of wine, and inferior hardly to none.

VINEGAR.

Vinegar is cooling, opening, excites the appetite, assists digestion, is good for hot stomachs, resists putrefaction, and therefore very good against pestilential diseases. Too much use of it injures the nerves, emaciates some constitutions, is hurtful to the breast and makes people look old and withered, with pale lips.

The best vinegar is that which is made of the best wines. Lemon-juice and verjuice have much the same qualities and effects as vinegar. The commonest vinegar is least adulterated.

COOKERY.

GENERAL DIRECTIONS TO THE MISTRESS OF A FAMILY.

IN every rank those deserve the greatest praise, who best acquit themselves of the duties which their station requires. Indeed, this line of conduct is not a matter of choice but of necessity, if we would maintain the dignity of our character as rational beings.

In the variety of female acquirements, though domestic occupations stand not so high in esteem as they formerly did, yet when neglected they produce much human misery. There was a time when ladies knew nothing *beyond* their own family concerns; but in the present day there are many who know nothing *about* them. Each of these extremes should be avoided: but is there no way to unite in the female character, cultivation of talents and habits of usefulness? Happily there are still great numbers in every situation, whose example proves that this is possible. Instances may be found of ladies in the higher walks of life who condescend to examine the accounts of their house steward; and, by overlooking and wisely directing the expenditure of that part of their husbands' income which falls under their own

inspection, avoid the inconvenience of embarrassed circumstances.

The direction of a table is no inconsiderable branch of a lady's concern, as it involves judgment in expenditure, respectability of appearance and the comfort of her husband and those who partake of their hospitality.

If a lady has never been accustomed, while single, to think of family management, let her not upon that account fear that she cannot attain it; she may consult others who are more experienced, and acquaint herself with the necessary quantities of the several articles of family expenditure, in proportion to the number it consists of, the proper prices to pay, &c. &c.

A minute account of annual income, and the times of payment, should be taken in writing; likewise an estimate of the supposed amount of each article of expense; and those who are early accustomed to calculations on domestic articles, will acquire so accurate a knowledge of what their establishment requires, as will give them the happy medium between prodigality and parsimony, without acquiring the character of meanness.

Many families have owed their prosperity full as much to the propriety of female management, as to the knowledge and activity of the father.

The following hints may be useful as well as economical:—

Every article should be kept in the place best suited to it, as much waste may be thereby avoided.

Vegetables will keep best on a stone floor, if the air be excluded.—Meat in a cold dry place.—Sugar and sweetmeats require a dry place; so does salt.—Candles, cold, but not damp.—Dried meats, hams, &c. the same. All sorts of seeds for puddings, saloop, rice, &c. should be close covered, to preserve from insects; but that will not prevent it, if long kept.

Bread is now so heavy an article of expense, that all waste should be guarded against; and having it cut in the room will tend much to prevent it.—Since the scarcity in 1795 and 1800, that custom has been much adopted. It should not be cut until a day old. Earthen pans and covers keep it best.

Straw to lay apples on should be quite dry, to prevent a musty taste.

Large pears should be tied up by the stalk.

Basil, savoury, or knotted marjorum, or thyme, to be used when herbs are ordered; but with discretion, as they are very pungent.

The best means to preserve blankets from moths is to fold them and lay them under the feather-beds that are in use; and they should be shaken occasionally. When soiled they should be washed, not scoured.

Soda, by softening the water, saves a great deal of soap. It should be melted in a large jug of water, some of which pour into the tubs and boiler; and when the lather becomes weak, add more. The new improvement in soft soap is, if properly used, a saving of nearly half in quantity.

Many good laundresses advise soaping linen in warm water the night previous to washing, as facilitating the operation with less friction.

Soap should be cut with a wire or twine, in pieces that will make a long square when first brought in, and kept out of the air two or three weeks; for if it dry quick it will crack, and when wet, break. Put it on a shelf, leaving a space between, and let it grow hard gradually. Thus, it will save a full third in the consumption.

Some of the lemons and oranges used for juice should be pared first to preserve the peel dry; some should be halved, and when squeezed, the pulp cut out, and the outside dried for grating. If for boiling in any liquid, the first way is best. When these fruits are cheap, a proper quantity should be bought and prepared as above directed, especially by those who live in the country, where they cannot always be had; and they are perpetually wanted in cookery.

When whites of eggs are used for jelly, or other purposes, contrive to have pudding, custard, &c. to employ the yolks also. Should you not want them for several hours, beat them up with a little water, and put them in a cool place, or they will be hardened and useless. It is a mistake of old, to think that the whites made cakes and puddings heavy; on the contrary, if beaten long and separately, they contribute greatly to give lightness. are an advantage to paste, and make a pretty dish beaten with fruit, to set in cream, &c.

If copper utensils be used in the kitchen, the cook should be charged to be very careful not to let the tin be rubbed off, and to have them fresh done when the least defect appears, and never to put by any soup, gravy, &c. in them, or any metal utensil; stone and earthen vessels should be provided for those purposes, as likewise plenty of common dishes, that the table-set may not be used to put by cold meat.

Tin vessels if kept damp, soon rust, which causes holes. Fenders, and tin linings of flower-pots, &c. should be painted every year or two.

Vegetables soon sour, and corrode metals and glazed red ware, by which a strong poison is produced. Some years ago the death of several gentlemen was occasioned at salt-hill, by the cook sending a ragout to the table, which she had kept from the preceding day in a copper vessel badly tinned.

Vinegar, by its acidity, does the same, the glazing being of lead or arsenic.

The best way of scalding fruits, or boiling vinegar, is in a stone jar on a hot iron hearth: or by putting the vessel in a saucepan of water, called a waterbath.

If chocolate, coffee, jelly, gruel, bark &c. be suffered to boil over, the strength is lost.

In the following and indeed all other receipts, though the quantities may be as accurately directed as possible, yet much must be left to the direction of the person who uses them. The different tastes of people require more or less of the flavor of spices, salt, garlic, but

ter, &c. which can never be ordered by general rules; and if the cook has not a good taste, and attention to that of her employers, not all the ingredients which nature and art can furnish, will give exquisite flavor to her dishes. The proper articles should be at hand, and she must proportion them until the true *zest* be obtained, and a variety of flavor be given to the different dishes served at the same time.

Those who require *maigre* dishes will find abundance in this work; and where they are not strictly so, by suet or bacon being directed into the stuffings, the cook must use butter instead; and where meat gravies (or stock, as they are called) are ordered, those made of fish must be adopted.

COOKING.

COOKING is effected by various methods, of which boiling is the most common, but the most objectionable; as it deprives flesh of its nutritious juice. A better mode of dressing animal food is *roasting*, by which its strength is less dissipated; because a crust is soon formed on its surface, that more effectually preserves the nutritive particles from evaporation. Hence one pound of roasted meat is in real nourishment, equal to double that quantity of boiled animal food.

Many substances, though possessed of salubrious qualities, are rendered unwholesome by the refinements of cookery. By compounding several incongruous ingredients to produce a

poignant sauce, or rich soup, the cook frequently forms compositions that are almost poisonous. Thus, high seasoning of every kind, pickles and the like, merely stimulate the palate, and cannot fail to injure the stomach. Hence, the plainest dishes are uniformly the most conducive to health, while they are most easily digested. This self-evident proposition is acknowledged by every reflecting person, but gives the least satisfaction to the epicure, who consults his taste before he appeals to his warped understanding.

Animal food is generally boiled in half open vessels, instead of which, close utensils only ought to be employed for that purpose. We therefore recommend the process called stewing; as it is not only the most wholesome mode of dressing meat, but at the same time well adapted to retain and concentrate the most substantial parts, of animal food. The utility of preparing victuals after this method having been generally acknowledged, we shall pay particular attention to it.

Various other methods will also be given, to enable the cook to pursue the most convenient course.

TO CHOOSE MEATS.

Venison.—If the fat be clear, bright, and thick, and the cleft part smooth and close, it is young, but if the cleft is wide and tough, it is old.

Beef.—If the flesh of ox-beef is young, it will have a fine, smooth, open grain, be of good

red, and feel tender. The fat should look white rather than yellow; for when that is of a deep colour, the meat is seldom good: beef fed by oil cakes is in general so, and the flesh is flabby.

Veal.—The flesh of a bull calf is the firmest, but not so white. The fillet of the cow-calf is generally preferred for the udder. The whitest is the most juicy, having been made so by frequent bleeding and having had whiting to lick.

Mutton.—Choose this by the fineness of its grain, good colour, and firm white fat.

Lamb.—Observe the neck of a fore quarter; if the vein is bluish, it is fresh; if it has a green or yellow cast, it is stale.

Pork.—Pinch the lean, and if young it will break. If the rind is tough, thick, and cannot easily be impressed by the finger it is old. A thin rind is a merit in all pork. When fresh, the flesh will be smooth and cool; if clammy it is tainted.

Bacon.—If the rind is thin, the fat firm, and of a red tinge, the lean tender, of a good colour and adhering to the bone, you may conclude it good, and not old.

Hams.—Stick a sharp knife under the bone: if it comes out with a pleasant smell, the ham is good; but if the knife is daubed and has a bad scent, do not buy it.

Fowls.—The combs and legs are smooth when the fowl is young, and rough when it is old.

Geese.—The bills and feet of geese should be yellow and have but few hairs upon them. Their feet will be pliable when fresh or recently killed, and dry and stiff when they have been killed a long time.

Ducks.—The breast should be hard and plump, feet limber and supple. The feet of a tame duck are yellowish, those of a wild one are reddish.

Pigeons.—They should be eaten while they are fresh; when they look flabby and discoloured about the under part, they have been kept too long.

Partridges.—These birds have yellow legs, and a dark coloured bill when young. They are not in season till after the first of September.

For recipe to preserve animal food sweet in warm weather, and to sweeten it when tainted see pages 33 and 34.

Dr Helm of Vienna has made some interesting experiments on the stomach, in which he ascertained the following facts relating to meats &c. The state of one of his patients induced him to investigate more particularly the digestive powers of a sound stomach.

He and several other healthy gentlemen partook of the same food as the patient with this difference, that they enclosed theirs partly in tin perforated cylindrical tubes; and some of the articles which they swallowed were secured in pieces of linen. He discovered that, among animal food, veal, lamb, pork,

venison, and rabbit, is far more digestible than beef, mutton, and the flesh of wild hogs.

Ham is very digestible, except the rind or skin. The flesh of geese and ducks are hard to digest.

All meats, say medical writers, are best and most wholesome when the animal is at maturity.

TO BOIL MEATS, &c.

THIS most simple of culinary processes is not often performed in perfection, though it does not require so much nicety and attendance as roasting; to skim the pot well, and to keep it moderately boiling, and to know how long the joint requires, comprehends the most useful points of this branch of cookery. The cook must take especial care that the water really boils all the while she is cooking, or she will be deceived in the time. An adept cook will manage with much less fire for boiling than she uses for roasting, and to last all the time without much mending. When the water is coming to a boil there will always rise from the cleanest meat a scum to the top; this must be carefully taken off as soon as it appears, for on this depends the good appearance of a boiled dinner. When you have skimmed it well, put in a little cold water, which will throw up the rest of it. If let alone, it soon boils down and sticks to the meat, which, instead of looking white and healthful, will have a coarse and uninviting appearance.

Many cooks put in milk to make what they boil look white, but this does more harm than good; others wrap the meat in a cloth; but if it is well skimmed it will have a much more delicate appearance than when it is muffled up.

Put the meat into cold water in the proportion of about a quart to every pound of meat; it should remain covered during the whole process of boiling, but only just so. Water beyond what is absolutely necessary renders the meat less savoury and weakens the broth

The water should be gradually heated according to the thickness, &c. of the article boiled; for instance, a leg of mutton of 10 lbs. weight should be placed over a moderate fire, which will gradually heat the water without causing it to boil, for about forty minutes. If the water boils much sooner, the meat will be hardened, and shrink up as if it were scorched. Reckon the time from its first coming to a boil; the slower it boils the tenderer, the plumper, and whiter it will be. For those who choose their food thoroughly cooked, twenty minutes to a pound will not be found too much for gentle simmering by the side of the fire. Fresh killed meat will take much longer time boiling than that which has been kept till what the butchers call ripe; if it be fresh killed it will be tough and hard if stewed ever so long, and ever so gently. The size of the boiling pots should be adapted to what they are to contain; in small families we recommend block tin sauce-pans, &c. as lightest and safest, taking care that the covers fit close, otherwise the

introduction of smoke may be the means of giving the meat a bad taste. Beef and mutton a little underdone is not a great fault, but lamb, pork, and veal are uneatable and truly unwholesome, if not thoroughly boiled. Take care of the liquor in which poultry or meat has been boiled, as an addition of peas, herbs, &c. will convert it into a nourishing soup.

TO BAKE MEATS, &c.

THIS is one of the cheapest and most convenient ways of dressing a dinner in small families, and although the general superiority of roasting must be allowed, still certain joints and dishes, such as legs and loins of pork, legs and shoulders of mutton, and fillets of veal, will bake to great advantage, if the meat be good. Besides those joints above mentioned, we shall enumerate a few baked dishes which may be particularly recommended.

A pig when sent to the baker prepared for baking, should have its ears and tail covered with buttered paper, and a bit of butter tied up in a piece of linen to baste the back with, otherwise it will be apt to blister. If well baked it is considered equal to a roasted one.

A goose prepared the same as for roasting, or a duck placed upon a stand and turned, as soon as one side is done, upon the other, are equally good.

A buttock of beef, prepared as follows, is particularly fine: after it has been put in salt about a week, let it be well washed and put

into a brown earthen pan with a pint of water; cover the pan tight over with 2 or 3 thicknesses of cap paper, and give it four or five hours in a moderately heated oven.

A ham, if not too old, put in soak for an hour, taken out and baked in a moderately heated oven, cuts fuller of gravy, and of a finer flavor than a boiled one.

Cod fish, haddock, and mackarel, should have a dust of flour and some bits of butter spread over them. Eels when large and stuffed, herrings and sprats, are put in a brown pan, with vinegar and a little spice, and tied over with paper.

A hare, prepared the same as for roasting, with a few bits of butter and a little milk, put into the dish and basted several times, will be found nearly equal to roasting: in the same manner legs and shins of beef will be equally good with proper vegetable seasoning.

TO ROAST MEATS, &c.

THE first thing requisite for roasting is to have a strong steady fire, or a clear brisk one, according to the size and weight of the joint that is put down to the spit. A cook, who does not attend to this, will prove herself totally incompetent to roast victuals properly. All roasting should be done open to the air, to ventilate the meat from its gross fumes, otherwise it will become baked instead of roasted. The joint should be put down at such a distance from the fire as to imbibe the heat rather quickly,

otherwise its plumpness and good quality will be gradually dried up, and it will turn shrivelly, and look meagre. When the meat is first put down, it is necessary to see that it balances well on the spit, otherwise the process of cooking will be very troublesome. When it is warm, begin to baste it well, which prevents the nutritive juice escaping; and, if required, additional dipping must be used for that purpose.

As to sprinkling with salt while roasting, most able cooks dispense with it, as the penetrating particles of the salt have a tendency to draw out the animal juices; however, a little salt thrown on, when first laid down, is sometimes necessary, with strong meats. When the smoke draws towards the fire, and the dropping of the clear gravy begins, it is a sure sign that the joint is nearly done. Then take off the paper, baste well, and dredge it with flour, which brings on that beautiful brownness which makes roasted meats look so inviting.

With regard to the time necessary for roasting various meats, it will vary according to the different sorts, the time it has been kept, and the temperature of the weather. In summer, 20 minutes may be reckoned equal to half an hour in winter. A good skreen, to keep off the chilling current of air, is essentially useful. The old housewife's rule is to allow rather more than a quarter of an hour to each pound, and in most instances it proves practically correct.

In roasting mutton or lamb, the loin, the chine, and the saddle, must have the skin raised

and skewered on; and, when nearly done, take off this skin, and baste and flour to froth it up.

Veal requires roasting brown, and if a fillet or loin, be sure to paper the fat, that as little of it may be lost as possible. When nearly done, baste it with butter and dredge with flour.

Pork should be well done. When roasting a loin, cut the skin across with a sharp knife, otherwise the crackling is very awkward to manage. Stuff the knuckle part with sage and onion, and skewer it up. Put a little drawn gravy in the dish, and serve it up with apple sauce in a tureen. A spare-rib should be basted with a little butter, a little dust of flour, and some sage and onion shred small. Apple sauce is the only one which suits this dish.

Wild fowls require a clear brisk fire, and should be roasted till they are of a light brown, but not too much; yet it is a common fault to roast them till the gravy runs out, thereby losing their fine flavour.

Tame fowls require more roasting, as the heat is longer in penetrating: they should be often basted, in order to keep up a strong froth, and to improve their plumpness.

Pigs and geese should be thoroughly roasted before a good fire, and turned quickly.

Hares and rabbits require time and care, especially to have the ends sufficiently done, and to remedy that raw discolouring at the neck, &c. which proves often so objectionable at table.

TO REGULATE TIME IN COOKERY.

Mutton.—A leg of 8 lbs. will require two hours and a half. A chine or saddle 10 or 11 lbs. two hours and a half. A shoulder of 7 lbs. one hour and a half. A loin of 7 lbs. one hour and three quarters. A neck and breast, about the same time as a loin.

Beef.—The surloin of 15 lbs. from three hours and three-quarters to four hours. Ribs of beef from 15 to 20 lbs. will take three hours to three hours and a half.

Veal.—A fillet from 12 to 16 lbs. will take from four to five hours, at a good fire. A loin, upon the average, will take three hours. A shoulder from three hours to three hours and a half. A neck, two hours. A breast, from an hour and a half to two hours.

Lamb.—Hind quarter of 8 lbs. will take from an hour and three-quarters to two hours. Fore quarter of 10 lbs. about two hours. Leg of 5 lbs. from an hour and a quarter to an hour and a half. Shoulder, or breast, with a quick fire, an hour.

Pork.—A leg of 8 lbs. will require about three hours. Griskin, an hour and a half. A spare-rib of 8 or 9 lbs. will take from two hours and a half to three hours, to roast it thoroughly. A bald spare-rib of 8 lbs. an hour and a quarter. A loin of 5 lbs. if very fat, from two hours to two hours and a half. A sucking pig, of three weeks old, about an hour and a half.

Poultry.—A very large turkey will require about three hours; one of 10 lbs. two hours; a small one an hour and a half.

A full-grown fowl, an hour and a quarter; a moderate sized one, an hour.

A pullet, from half an hour to 40 minutes.

A goose, full grown, from an hour and a half to two hours.

A green goose, 40 minutes.

A duck, full size, from 30 to 50 minutes.

Venison.—A buck haunch which weighs from 20 to 25 lbs. will take about four hours and a half roasting: one from 12 to 18 lbs. will take three hours and a quarter.

TO DRESS VENISON.

A haunch of buck will take three hours and a half, or three quarters, roasting: doe, only three hours and a quarter. Venison should be rather under than over done.

Spread a sheet of white paper with butter and put it over the fat, first sprinkle it with a little salt; then lay a coarse paste on strong paper, and cover the haunch; tie it with fine pack, thread, and set it at a distance from the fire, which must be a good one. Baste it often: ten minutes before serving take off the paste, draw the meat nearer the fire, and baste it with butter and a good deal of flour, to make it froth up well.

Gravy for it, should be put into a boat, and not into a dish (unless there is none in the venison.) and made thus: Cut off the fat from two or three pounds of loin of old mutton, and set in steaks on a gridiron for a few minutes just to

brown one side; put them into a sauce-pan with a quart of water, cover quite close for an hour, and simmer it gently; then uncover it, and stew till the gravy is reduced to a pint. Season with salt only. Currant-jelly sauce must be served in a boat.

Formerly pap-sauce was eaten with venison: which as some still like it, it may be necessary to direct. Grate white bread, and boil it with port wine, water and a large stick of cinnamon, when quite smooth take out the cinnamon, and add sugar. Claret may be used for it.

Make the jelly-sauce thus. Beat some currant-jelly and a spoonful or two of port wine, and set it over the fire till melted. Where jelly runs short put more wine and a few lumps of sugar to the jelly, and melt as above. Serve with French beans.

Haunch, neck, and shoulder of venison. Roast with paste as above, and the same sauce.

TO STEW A SHOULDER OF MUTTON.

LET the meat hang till you judge proper to dress it, then take out the bone, beat the meat with a rolling-pin, lay some slices of mutton fat, that have lain a few hours in a little port wine, among it, sprinkle a little pepper and alspice over it in fine powder, roll it up tight, and tie it. Set in a stew-pan that will only just hold it, with some mutton or beef gravy not strong, half a pint of port wine, and some pepper and alspice. Simmer it close covered, and as slow as you can, for three or four hours. When quite tender, take off the tape, set the meat on a dish, and strain

the gravy over it. Serve with currant-jelly sauce.

This is the best way to dress this joint, unless it is very fat, and then it should be roasted. The bone should be stewed with it.

BREAST OF VENISON.

Do it as the shoulder, or make it into a small pastry.

HASHED VENISON.

SHOULD be warmed with its own gravy, or some without seasoning, as before; and only warmed through, not boiled. If there is no fat left, cut some slices of mutton fat, set it on the fire with a little port wine and sugar, simmer till dry; then put to the hash, and it will eat as well as the fat of the venison.

BEEF A-LA-MODE.

CHOOSE a piece of thick flank of a fine heifer or ox—cut into long slices some fat bacon, but quite free from yellow; let each bit be near an inch thick; dip them into vinegar, and then into a seasoning ready prepared, of salt, black pepper, alspice, and a clove, all in a fine powder, with parsley, chives, thyme, savoury, and knotted marjorum, shred as small as possible, and well mixed. With a sharp knife make

holes deep enough to let in the larding, then rub the beef over with the seasoning, and bind it up tight with tape. Set it in a well tinned pot over a fire or rather stove; three or four onions must be fried brown and put to the beef, with two or three carrots, one turnip, a head or two of celery, and a small quantity of water, let it simmer gently ten or twelve hours, or till extremely tender, turning the meat twice.

Put the gravy into a pan, remove the fat, keep the beef covered, then put them together, and add a glass of port wine. Take off the tape, and serve with the vegetable: or you may strain them off, and send them up cut into dice for garnish. Onions roasted, and then stewed with the gravy, are a great improvement. A tea cup full of vinegar should be stewed with the beef.

A FRICANDEAU OF BEEF.

TAKE a nice bit of lean beef; lard it with bacon seasoned with pepper, salt, cloves, mace, and alspice. Put it into a stew-pan with a pint of broth, a glass of white wine, a bundle of parsley, all sorts of sweet herbs, a clove of garlic, a shallot or two, four clovers, pepper and salt. When the meat is become tender, cover it close, skim the sauce well, and strain it, set it on the fire, and let it boil till it is reduced to a glaze. Glaze the larded side with this, and serve the meat on sorrel-sauce.

TO STEW A RUMP OF BEEF.

WASH it well, and season it high with pepper, Cayenne, salt, alspice, three cloves, and a blade of mace, all in fine powder. Bind it up tight, and lay it into a pot that will just hold it. Fry three large onions sliced, and put them to it, with three carrots, two turnips, a shallot, four cloves, a blade of mace, and some celery. Cover the meat with good beef broth, or weak gravy. Simmer it as gently as possible for several hours, till quite tender. Clear off the fat; and add to the gravy half a pint of port wine, a glass of vinegar, and a large spoon of catsup. Simmer half an hour, and serve in a deep dish.—Half a pint of table-beer may be added. The herbs to be used should be burnet, tarragon, parsley, thyme, bala, savoury, majorum, pennyroyal, knotted majorum, and some chives, if you can get them, but observe to proportion the quantities to the pungency of the several sorts—let there be a good handful altogether.

Garnish with carrots, turnips, or truffles and morels, or pickles of different colours, cut small, and laid in little heaps separate: chopped parsley, chives, beet-root, &c. If, when done, the gravy is too much to fill the dish, take only a part to season for serving, but the less water the better: and to increase the richness, add a few beef bones and shanks of mutton in stewing. A spoonful or two of made mustard is a great improvement to the gravy.

TO STEW A BRISKET OF BEEF.

Put the part that has the hard fat into a stew pot with a small quantity of water; let it boil up, and skim it thoroughly; then add carrots, turnips, onions, celery, and a few pepper-corns. Stew it extremely tender; then take out the flat bones, and remove all the fat from the soup. Either serve that and the meat in a tureen, or the soup alone, and the meat on a dish, garnished with some vegetables. The following sauce is much admired served with the beef:—Take half a pint of the soup, and mix it with a spoonfull of catsup, a glass of port wine, a tea-spoonfull of made mustard, a little flour, a bit of butter and salt; boil altogether a few minutes, then pour it round the meat. Chop capers, walnuts, red cabbage, pickled cucumbers, and chives or parsley, small, but in several heaps over it.

TO PRESS BEEF.

SALT a bit of brisket, thin part of the flank, or the tops of the ribs, with salt and saltpetre five days, then boil it gently till extremely tender; put it under a great weight, or in a cheesc-press, till perfectly cold. It eats excellently cold, and for sandwiches:

TO MAKE HUNTER'S BEEF,

To a round of beef that weighs twenty-five pounds, take three ounces of saltpetre, three ounces of the coarsest sugar, an ounce of cloves,

a nutmeg, half an ounce of alspice, add three handfuls of common salt, all in the finest powder.

The beef should hang two or three days; then rub the above well into it, and turn and rub every day for two or three weeks. The bone must be taken out at first. When to be dressed, dip it into cold water, to take off the loose spice, bind it up tight with tape, and put it into a pan with a tea-cupful of water at the bottom, cover the top of the meat with shred suet, and the pan with a brown crust and paper, and bake it five or six hours.—When cold take off the paste and tape.

The gravy is very fine; and a litte of it adds greatly to the flavour of any hash, soup, &c.—Both the gravy and the beef will keep some time.

AN EXCELLENT MODE OF DRESSING BEEF.

HANG three ribs three or four days; take out the bones from the whole length, sprinkle it with salt, roll the meat tight, and roast it. Nothing can look nicer. The above done with spices, &c. and baked as hunter's beef, is excellent.

TO COLLAR BEEF.

CHOOSE the thin end of the flank of fine mellow beef, but not too fat; lay it into a dish with salt and saltpetre, turn and rub it every day for a week, and keep it cool. Then take

out every bone and gristle, remove the skin of the inside part, and cover it thick with the following seasoning cut small:—a large handful of parsley, the same of sage, some thyme, marjoram, and pennyroyal, pepper, salt, and alspice. Roll the meat up as tight as possible, and bind it, then boil it gently for seven or eight hours. A cloth must be put round before the tape. Put the beef under a good weight while hot, without undoing it: the shape will then be oval. Part of a breast of veal rolled in with the beef, looks and eats very well.

BEEF STEAKS.

SHOULD be cut from a rump that has hung a few days. Broil them over a very clear or charcoal fire: put into the dish a little minced challot, and a table spoonful of catsup: and rub a bit of butter on the steak the moment of serving. It should be turned often, that the gravy may not be drawn out on either side.

This dish requires to be eaten so hot and fresh done, that it is not in perfection if served with any thing else. Pepper and salt should be added when taking it off the fire.

BEEF STEAKS AND OYSTER SAUCE.

STRAIN off the liquor from the oysters, and throw them into cold water, to take off the grit, while you simmer the liquor with a bit of mace and melon-peel; then put the oysters in, stew them a few minutes, and a little cream, if you

have it, and some butter rubbed in a bit of flower; let them boil up once, and have rump-steaks well seasoned and broiled, ready for throwing the oyster sauce over, the moment you are to serve.

STEWED BEEF-STEAKS.

BEAT them with a little rolling pin, flour and season, then fry them with sliced onions of a fine light brown, lay the steaks into a stew-pan, and pour as much boiling water over them as will serve for sauce: stew them very gently half an hour, and add a spoonful of catsup, or walnut liquor, before you serve.

ITALIAN BEEF-STEAKS.

CUT a fine large steak from a rump that has been well hung, or it will do from any tender part: beat it, and season with pepper, salt and an onion: lay it into an iron stew pan that has a cover to fit quite close, and set it by the side of the fire without water. Take care it does not burn, but it must have a strong heat: in two or three hours it will be quite tender, and then serve with its own gravy.

BEEF COLLOPS.

CUT thin slices of beef from the rump, or any other tender part, and divide them into pieces three inches long; beat them with a blade of a knife, and flour them. Fry the collops quick in butter two minutes, then lay them into a

small stew-pan, and cover them with a pint of gravy; add a bit of butter rubbed in flour, pepper, salt, the least bit of shallot, shred as fine as possible, half a walnut, four small pickled cucumbers, a tea-spoonful of capers cut small. Take care that it does not boil, and serve the stew in a very hot covered dish.

BEEF PALATES.

SIMMER them in water several hours, till they will peel; then cut the palates into slices, or leave them whole, as you choose; and stew them in a rich gravy till as tender as possible. Before you serve, season them with Cayenne, salt, and catsup. If the gravy was drawn clear, add also some butter and flour.

If to be served white, boil them in milk, and stew them in fricasee-sauce, adding cream, butter, flower and mushroom-powder, and a little pounded mace.

BEEF CAKES FOR A SIDE DISH OF DRESSED MEAT.

POUND some beef that is under done with a little fat bacon, or ham; season with pepper, salt, and a little shallot, or garlic; mix them well, and make it into small cakes, three inches long, and half as wide and thick; fry them in a light brown, and serve them in a good thick gravy.

TO POT BEEF.

TAKE two pounds of lean beef, rub it with salt-petre, and let it lie one night; then salt with common salt, and cover with water four days in a small pan. Dry it with a cloth, and season with black-pepper; lay it into as small a pan as will hold it, cover it with coarse paste, and bake it five hours in a very cool oven. Put no liquor in.

When cold, pick out the strings, and fat; beat the meat very fine with a quarter of a pound of fine butter, just warm; but not oiled, and as much of the gravy as will make it into a paste; put it into very small pots, and cover them with melted butter.

TO DRESS THE INSIDE OF A COLD SIRLOIN OF BEEF.

CUT out all the meat, and a little fat, into pieces as thick as your finger, and two inches long: dredge it with flour; and fry in butter, of a nice brown, drain the butter from the meat, and toss it up in a rich gravy, seasoned with pepper, salt, anchovy, and challot. Do not let it boil on any account. Before you serve, add two spoonfuls of vinegar. Garnish with crimped parsley.

FRICASSEE OF COLD ROAST BEEF.

CUT the beef into very thin slices, shred a handful of parsley very small, cut an onion into quarters, and put all together into a stew-pan, with a piece of butter and some strong broth;

season with salt and pepper, and simmer very gently a quarter of an hour; then mix into it the yolks of two eggs, a glass of port wine, and a spoonful of vinegar; stir it quick, rub the dish with shallot, and turn the fricassee into it.

*To dress cold Beef that has not been done enough,
called Beef-Olives.*

CUT slices half an inch thick, and four inches square; lay them on forcemeat of crumbs of bread, shallot, a little suet, or fat, pepper and salt. Roll them, and fasten with a small skewer; put them into a stew-pan with some gravy made of beef bones, or the gravy of the meat, and a spoonful of water, and stew them till tender. Fresh meat will do.

TO MINCE BEEF.

SHRED the underdone part fine, with some of the fat, put it into a small stew-pan, with some onion or shallot, (a very little will do,) a little water, pepper, and salt; boil it till the onion is quite soft; then put some of the gravy of the meat to it, and the mince. Do not let it boil. Have a small hot dish with sippets of bread ready, and pour the mince into it, but first mix a large spoonful of vinegar with it; if shallot-vinegar is used, there will be no need of the onion nor the raw shallot.

TO HASH BEEF.

Do it the same as in the last receipt; only the meat is to be in slices, and you may add a spoonful of walnut liquor or catsup.

Observe that it is owing to *boiling* hash or minces, that they get hard. All sorts of stews, or meats dressed a second time, should be only simmered; and this last only hot through.

BEEF A-LA-VINGRETTE.

Cut a slice of underdone boiled beef three inches thick, and a little fat; stew it in half a pint of water, a glass of white wine, a bunch of sweet herbs, an onion, and a bay leaf; season it with three cloves pounded, and pepper, till the liquor is nearly wasted away, turning it once. When cold, serve it. Strain off the gravy, and mix it with a little vinegar for sauce.

ROUND OF BEEF.

SHOULD be carefully salted, and wet with the pickle for eight or ten days. The bone should be cut out first, and the beef skewered and tied up, to make it quite round. It may be stuffed with parsley if approved; in which case the holes to admit the parsley must be made with a sharp pointed knife, and the parsley coarsely cut, and stuffed in tight.—As soon as it boils it should be skimmed, and afterwards kept boiling very gently.

ROLLED BEEF THAT EQUALS HARE.

TAKE the inside of a large sirloin, soak it in a glass of port wine and a glass of vinegar mixed, for forty-eight hours; have ready a very fine stuffing, and bind it up tight. Roast it on a hanging spit, and baste it with a glass of port wine, the same quantity of vinegar, and a teaspoonful of pounded alspice.—Larding improves the look and flavour: serve with rich gravy in the dish; currant-jelly and melted butter in tureens.

TO ROAST TONGUE AND UDDER.

AFTER cleaning the tongue well, salt it with common salt and saltpetre three days; then boil it, and likewise a fine young udder with some fat to it, till tolerably tender; then tie the thick part of one to the thin part of the other, and roast the tongue and udder.

Serve them with good gravy, and currant-jelly sauce. A few cloves should be stuck in the udder.

TO STEW TONGUE.

SALT a tongue with saltpetre and common salt for a week, turning it every day. Boil it tender enough to peel; when done, stew it in a moderately strong gravy; season with soy, mushroom catsup, Cayenne, pounded cloves, and salt if necessary.

Serve with truffles, morels, and mushrooms. In both this receipt and the next, the roots must

be taken off the tongue before salting, but some fat left.

AN EXCELLENT WAY OF DOING TONGUES TO EAT COLD.

SEASON with common salt and saltpetre, brown sugar, a little bay-salt, pepper, cloves, mace and alspice, in fine powder for a fortnight; then take away the pickle, put the tongue into a small pan, and lay some butter on it; cover it with brown crust, and bake slowly till so tender that a straw would go through it.

The thin part of tongues, when hung up to dry, grates like hung beef, and also makes a fine addition to the flavour of omlets.

BEEF-HEART.

WASH it carefully; stuff as a hare; and serve with rich gravy, and currant-jelly sauce. Hash with the same, and port wine.

STEWED OX-CHEEK, PLAIN.

SOAK and cleanse a fine cheek the day before it is to be eaten; put it into a stew-pot that will cover close, with three quarts of water; simmer it after it has first boiled up and been well skimmed. In two hours put plenty of carrots, leeks, two or three turnips, a bunch of sweet herbs, some whole pepper, and four ounces of alspice. Skim it often; when the meat is tender take it out; let the soup get cold, take off

the cake of fat, and serve the soup separate or with meat.

It should be a fine brown; which might be done by burnt sugar; or by frying some onions quite brown with flour, and simmering them with it. This last way improves the flavour of all soups and gravies of the brown kind.

If vegetables are not approved of in the soup, they may be taken out, and a small roll toasted, or bread fried and added. Celery is a great addition, and should always be served. Where it is not to be got, the seed of it gives quite as good a flavour, boiled in, and strained off.

TO DRESS OX-CHEEK ANOTHER WAY.

SOAK half a head three hours, and clean it with plenty of water. Take the meat off the bones; and put it in a pan with a large onion, a bunch of sweet herbs, some bruised alspice, pepper and salt.

Lay the bones on the top: pour on two or three quarts of water, and cover the pan close with brown paper, or a dish that will fit close. Let it stand eight or ten hours in a slow oven; or simmer it by the side of the fire, or on a hot hearth. When done tender, put the meat into a clean pan and let it get cold. Take the cake of fat off, and warm the head in pieces in the soup. Put what vegetables you choose.

MARROW-BONES.

COVER the top with floured cloth; boil them and serve with dry toast.

TRIFE.

MAY be served in a tureen, stewed with milk and onion till tender. Melted butter for sauce.

Or fry it in small bits dipped in batter.

Or stew the thin part, cut into bits, in gravy; thicken with flour and butter. and add a little catsup.

Or fricassee it with white sauce.

SOUSED TRIPE.

BOIL the tripe, but not quite tender; then put it into salt and water, which must be changed every day till it is all used. When you dress the tripe, dip it into batter of flour and eggs, and fry it of a good brown.

FISH.

TO CHOOSE FISH.

Rock Fish.—A remarkably fine, firm, and well flavoured fish, should be chosen by the redness of the gills and a full bright eye; if the eye is sunk in and the gills pale, they have been too long out of the water; their firmness depends on their being cooked immediately after they are killed; the same fish in New York, and to the eastward of it, is known by the name of *Streaked Bass*.

Sheep's Head.—This fish is generally esteemed one of the finest brought to our markets. It should be firm and thick, and the eye bright. They are in season during the whole summer

Sea Bass and Black Fish are fine solid fish, and generally to be had alive in the Philadelphia market and to the eastward, it is seldom seen in the southern market.

Salmon.—If new, the flesh is of a fine red, (the gills particularly,) the scales bright, and the whole fish stiff. When just killed, there is a whiteness between the flakes which gives a great firmness; by keeping, this melts down, and the fish is more rich.

Cod.—The gills should be very red, the fish should be very thick at the neck, the flesh white and firm, and the eyes fresh. When flabby they are not good. They are in season from the beginning of December till the the end of April.

Shad.—If good, they are very white and thick, their gills red, and the eyes bright; the whole fish must be stiff and firm. Season, April and May.

Herrings.—If good, their gills are of a fine red and the eyes bright; as is likewise the whole fish, which must be stiff and firm.

Soles.—If good, they are thick, and the belly is of a cream colour; if this is of a bluish cast and flabby, they are not fresh. They are in the market almost the whole year, but are in the highest perfection about mid-summer.

Whitings.—The firmness of the body and fins, is to be looked to, as in herrings; their high season is during the first three months of the year, but they may be had a great part of it.

Mackerel.—Their season is May, June, and July. They are so tender a fish that they carry and keep worse than any other.

Pike.—For freshness observe the above marks. The best are taken in rivers; they are very dry fish, and are much indebted to stuffings and sauce.

Carp live some time out of water, and may therefore get wasted; it is best to kill them as soon as caught, to prevent this. The same signs of freshness attend them as other fish.

Trout.—They are a fine-flavoured fresh-water fish, and should be killed and dressed as soon as caught.—When they are to be bought, examine whether the gills are red, and hard to open, the eyes bright, and the body stiff. The season is July, August and September.

Perch.—Take the general rules given to distinguish the freshness of other fish.

Mulletts.—The sea are preferred to the river mullets, and the red to the gray. They should be very firm.—Their season is August.

Eels.—There is a greater difference in the goodness of eels than of any other fish. The true silver eel (so called from the bright colour of the belly,) is caught in all our rivers, those taken in great floods are generally good, but in ponds they have usually a strong rank flavour. Except the middle of summer, they are always in season.

Flounders.—They should be thick, firm, and have their eyes bright. They very soon become

flabby and bad. They are in season from January to March, and from July to September.

Prawns and Shrimps.—When fresh they have a sweet flavour, are firm and stiff, and the colour is bright.—Shrimps are of the prawn kind, and may be judged by the same rules.

Besides the above enumerated fish, our waters afford an immense quantity, many of which are extremely delicate, particularly as *pan fish*; but as the directions already given may be applied to them it is deemed unnecessary to go more into detail.

TO BOIL SALMON.

CLEAN it carefully, boil it gently, and take it out of the water as soon as done. Let the water be warm if the fish be split. If underdone, it is very unwholesome.—Shrimp or anchovy sauce.

TO BROIL SALMON.

CUT slices an inch thick, and season with pepper and salt; lay each slice in half a sheet of white paper, well buttered, twist the ends of the paper, and broil the slices over a slow fire six or eight minutes. Serve in the paper with anchovy sauce.

AN EXCELLENT DISH OF DRIED SALMON.

PULL some into flakes; have ready some eggs boiled hard and chopped large; put both

into half a pint of thin cream, and two or three ounces of butter rubbed with a tea-spoonful of flour; skim it and stir till boiling hot: make a wall of mashed potatoes round the inner edge of a dish, and pour the above into it.

COD.

SOME people boil the cod whole; but a large head and shoulders contain all the fish that is proper to help the thinner parts, being overdone and tasteless before the thick are ready. But the whole fish may be purchased at times more reasonably; and the lower half, if sprinkled and hung up, will be in high perfection one or two days. Or it may be made saltier, and served with egg-sauce, potatoes, and parsnips.

TO DRESS FRESH STURGEON.

Cut slices, rub egg over them, then sprinkle with crumbs of bread, parsley, pepper, salt; fold them in paper, and broil gently. Sauce—butter, anchovy, soy.

MACKEREL.

Boil and serve with butter and fennel.

To broil them, split, and sprinkle with herbs, pepper, and salt; or stuff with the same, crumbs and chopped fennel.

TO BAKE PIKE.

SCALE it, and open as near the throat as you can, then stuff it with the following:—grated bread, herbs, anchovies, oysters, suet, salt, pepper, mace, half a pint of cream, four yolks of eggs; mix all, over the fire till it thickens, then put it into the fish, and sew it up, butter should be put over it in little bits, bake it. Serve sauce of gravy, butter, and anchovy. Note—If, in helping a pike, the back and belly are slit up, and each slice gently drawn downwards, there will be fewer bones given.

FRIED EELS.

IF small, they should be curled round and fried, being first dipped into egg and crumbs of bread.

BOILED EELS.

THE small ones are best—do them in a small quantity of water, with a good deal of parsley, which should be served up with them and the liquor. Serve chopped parsley and butter for sauce.

BAKED HERRINGS.

WASH and drain without wiping them: season with allspice in fine powder, salt, and a few whole cloves: lay them in a pan with plenty of black pepper, an onion, and a few bay leaves.

Add half vinegar and half small beer, enough to cover them. Put paper over the pan, and bake in a slow oven. If you like, throw saltpetre over them the night before, to make them look red. Cut, but do not open them.

VEAL.

TO KEEP VEAL.

THE first part that turns bad of a leg of veal, is where the udder is skewered back. The skewer should be taken out, and both that and the meat under it wiped very dry, by which means it will keep good three or four days in hot weather.

LEG OF VEAL.

LET the fillet be cut large or small, as best suits the number of your company. Take out the bone, fill the space with fine stuffing, and let it be skewered quite round; and send the large side uppermost. When half roasted if not before, put a paper over the fat; and take care to allow a sufficient time, and put it a good distance from the fire, as the meat is very solid; serve with melted butter poured over it.—You may pot some of it.

KNUCKLE OF VEAL.

As few people are fond of boiled veal, it may be well to leave the knuckle small, and take off some cutlets or collops before it be dressed; and

as the knuckle will keep longer than the fillet, it is best not to cut off the slices till wanted. Break the bone to make it take less room; wash it well; and put it in a saucepan with three onions, a blade or two of mace, and a few pepper corns; cover it with water and simmer it till quite ready. In the mean time some macaroni should be boiled with it if approved, or rice, or a little rice flour, to give it a small degree of thickness: But do not put too much. Before it is served, add half a pint of milk and cream, and let it come up either with or without the meat.

Or fry the knuckle with sliced onions and butter to a good brown; and have ready peas, lettuce, onion, and a cucumber or two, stewed in a small quantity of water, an hour; then add these to the veal; and stew it till the meat is tender enough to eat, but not overdone. Throw in pepper, salt, and a bit of shred mint, and serve altogether.

SHOULDER OF VEAL.

Cut off the knuckle, for a stew or gravy. Roast the other part for stuffing; you may lard it. Serve with melted butter.

The blade-bone, with a good deal of meat left on, eats extremely well with mushroom or oyster-sauce, or mushroom-catsup in butter.

NECK OF VEAL.

Cut off the scrag to boil, and cover it with onion sauce. It should be boiled in milk and

water. Parsley and butter may be served with it, instead of onion-sauce.

Or it may be stewed with whole rice, small onions, and pepper-corns, with a very little water.

Or boiled, eaten with bacon and greens.

The best end may be either roasted, broiled as steaks, or made into pies.

NECK OF VEAL A-LA-BRAISE.

LARD the best end with bacon rolled in parsley chopped fine, salt, pepper, and nutmeg: put it into a tosser, and cover it with water. Put to it the scrag-end, a little lean bacon or ham, an onion, two carrots, two heads of celery, and about a glass of Madeira wine. Stew it quick two hours, or till it is tender, but not too much. Strain off the liquor: mix a little flour and butter in a stew-pan till brown, and lay the veal in this, the upper side to the bottom of the pan. Let it be over the fire till it gets coloured; then lay it into the dish, stir some of the liquor in and boil it up, skim it nicely, and squeeze orange or lemon-juice into it.

BREAST OF VEAL.

BEFORE roasted, if large, the two ends may be taken off and fried to stew, or the whole may be roasted.—Butter should be poured over it.

If any be left, cut the pieces into handsome sizes, put them into a stew-pan, and pour some

broth over it; or if you have no broth, a little water will do; add a bunch of herbs, a blade or two of mace, some pepper and an anchovy; stew till the meat is tender, thicken with butter and flour, add a little catsup; or the whole breast may be stewed, after cutting off the two ends.

Serve the sweet bread whole upon it, which may either be stewed, or parboiled, and then covered with crumbs, herbs, pepper, and salt, and browned in a Dutch oven.

TO POT VEAL OR CHICKEN WITH HAM.

POUND some cold veal or white of chicken seasoned as directed in the last article, and put layers of it with layers of ham pounded or rather shred; press each down, and cover with butter.

VEAL COLLOPS.

Cut long thin collops; beat them well, and lay on them a bit of thin bacon of the same size, and spread forcemeat on that, seasoned high, and also a little garlic and Cayenne. Roll them up tight, about the size of two fingers, but no more than two or three inches long; put a very small skewer to fasten each firmly; rub egg over: fry them of a fine brown, and pour a rich brown gravy over.

VEAL CAKE:

BOIL six or eight eggs hard; cut the yolks in two, and lay some of the pieces in the bottom of the pot: shake in a little chopped parsley, some slices of veal and ham, add then eggs again; shaking in after each some chopped parsley, with pepper and salt, till the pot is full. Then put in water enough to cover it, and lay on it about an ounce of butter; tie it over with a double paper, and bake it about an hour. Then press it close together with a spoon, and let it stand till cold.

It may be put into a small mould; and then it will turn out beautifully for a supper or side dish.

TO BOIL CALF'S HEAD.

CLEAN it very nicely, and soak it in water till it may look very white; take out the tongue to salt, and the brains to make a little dish. Boil the head extremely tender; then strew it over with crumbs and chopped parsley, and brown them; or if liked better, leave one side plain. Bacon and greens are to be served to eat with it.

The brains must be boiled; and then mixed with melted butter, scalded sage chopped; pepper, and salt.

If any of the head is left, it may be hashed next day, and a few slices of bacon just warmed and put round. Cold calf's head eats well if grilled.

CALF'S HEAD FRICASSEED.

CLEAN and half boil a head; cut the meat into small bits, and put it into a tosser, with a little gravy made of the bones, some of the water it was boiled in, a bunch of sweet herbs, an onion, and a blade of mace. If you have any young cockrels in the house, use the cox-combs; but first boil them tender, and blanch them; or sweet-bread will do as good. Season the gravy with a little pepper, nutmeg, and salt, rub down some flour and butter. and give all a boil together; then take out the herbs and onion, and add a little cup of cream, but do not boil it in.—Serve with small bits of bacon rolled round, and balls.

MOCK TURTLE.

BESPEAK a calf's head with the skin on, cut it in half, and clean it well; then half-boil it, take all the meat off in square bits, break the bones of the head, and boil them in some veal and beef broth to add to the richness. Fry some shallot in butter, and dredge in flour enough to thicken the gravy; stir this into the browning, and give it one or two boils: skim it carefully, and then put in the head; put in also a pint of Madeira wine, and simmer till the meat is quite tender. About ten minutes before you serve, put in some balis, taragon, chives, parsley, Cayenne pepper, and salt, to your taste; also two spoonfuls of mushroom-catsup, and one of soy.

Squeeze the juice of a lemon into the tureen, and pour the soup upon it. Forcemeat-balls and small eggs.

A cheaper way.—Prepare half a calf's head *without* the skin as above: when the meat is cut off, break the bones, and put them into a sauce-pan with some gravy made of beef and veal bones, and seasoned with fried onions, herbs, mace, and pepper. Have ready two or three ox-palates boiled so tender as to blanch, and cut into small pieces; to which a cow heel, likewise cut into pieces, is a great improvement. Brown some butter, flour, and onion, and pour the gravy to it; then add the meats as above, and stew. Half a pint of sherry, an anchovy, two spoonfuls of walnut catsup, the same of mushroom catsup, and some chopped herbs as before.—Balls, &c.

PORK ECT.

BACON, hogs, and porkers, are differently cut up.

Hogs are kept to a large size; the chine, (or back-bone,) is cut down on each side, the whole length, and is a prime part either boiled or roasted.

The sides of a hog are made into bacon, and the inside is cut out with very little meat to the bone. On each side there is a large spare-rib; which is usually divided into two, one sweet-bone, and a blade-bone. The bacon is the whole outside: and contains a fore-leg and a ham; which last is the hind-leg, but if left with the bacon it is called a gammon.

TO ROAST A LEG OF PORK.

CHOOSE a small leg of fine young pork: cut a slit in the knuckle with a sharp knife; and fill the space with sage and onion chopped, and a little pepper and salt. When half-done score the skin in slices, but do not cut deeper than the outer rind.

Apple-sauce and potatoes should be served to eat with it.

TO BOIL A LEG OF PORK.

SALT it eight or ten days: when it is to be dressed, weigh it; let it lie half an hour in cold water, to make it white: allow a quarter of an hour for every pound, and half an hour over for the time it boils up; skim it as soon as it boils, and frequently after. Allow water enough—Save some of it to make pea-soup. Some boil it in a very nice cloth, floured; which gives a very delicate look. It should be small and of a fine grain. Serve peas-pudding and turnips with it.

LOIN AND NECK OF PORK.

ROAST them. Cut the skin of the loin across, at distances of half an inch, with a sharp pen-knife

SHOULDERS AND BREASTS OF PORK.

PUT them into pickle, or salt the shoulder as a leg: when very nice, they may be roasted.

SPARE-RIB.

SHOULD be basted with a very little butter and a little flour, and then sprinkled with a little dried sage crumbled.—Apple-sauce and potatoes for roasted pork.

BLADE-BONE OF PORK.

Is taken from the bacon-hog; the less meat left on it, in moderation, the better. It is to be broiled; and when just done, pepper and salt it. Put to it a piece of butter, and a tea-spoonful of mustard; and serve it covered, quickly.

PORK STEAKS.

CUT them from a loin or neck, and of middling thickness: pepper and broil them, turning them often; when nearly done, put on salt, rub a bit of butter over, and serve the moment they are taken off the fire, a few at a time.

SAUSAGES.

CHOP fat and lean pork together; season it with sage, pepper and salt, and you may add two or three berries of a spice; *half fill* hog's guts that have been soaked and made extremely clean: or the meat may be kept in a very small pan closely covered: and so rolled and dusted with very little flour before it is fried. Serve on stewed red cabbage; or mash potatoes put in a form, brown with salamander, and garnish

with the above; they must be pricked with a fork before they are dressed, or they will burst.

AN EXCELLENT SAUSAGE TO EAT COLD.

SEASON lean and fat pork with some salt, saltpetre, black pepper, and alspice, all in fine powder, and rub into the meat; the sixth day cut it small, and mix with it some shred shallot or garlic, as fine as possible.—Have ready an ox-gut that has been scoured, salted, and soaked well, and fill it with the above stuffing; tie up the ends, and hang it to smoke as you would hams, but first wrap it in a fold or two of old muslin. It must be high-dried. Some eat it without boiling, but others like it boiled first. The skin should be tied in different places, so as to make each link about eight or nine inches long.

SAUSAGES.

CHOP a pound and a half of pork, and the same of veal, cleared of skin and sinews; add three quarters of a pound of beef-suet; mince and mix them: steep the crumb of a penny-loaf in water, and mix it with the meat, with also a little dried sage, pepper and salt.

TO ROAST A SUCKING PIG.

IF you can get it when just killed, this is of great advantage. Let it be scalded, which the dealers usually do; then put some sage, crumbs

of bread, salt, and pepper, into the belly, and sew it up. Observe to skewer the legs back, or the under part will not crisp.

Lay it to a brisk fire till thoroughly dry ; then have ready some butter in a dry cloth, and rub the pig with it in every part. Dredge as much flour over as will possibly lie, and do not touch it again til ready to serve ; then scrape off the flour very carefully with a blunt knife, rub it well with the buttered cloth, and take off the head while at the fire ; take out the brains, and mix them with the gravy that comes from the pig. Then take it up ; and without withdrawing the spit, cut it down the back and belly, lay it into the dish, and chop the sage and bread quickly, as fine as you can, and mix them with a large quantity of fine melted butter that has very little flour. Put the sauce into the dish after the pig has been split down the back, and garnished with the ears and the two jaws ; take off the upper part of the head down to the snout.

TO MAKE EXCELLENT MEAT OF A HOG'S HEAD.

SPLIT the head, take out the brains, cut off the ears, and sprinkle it with common salt for a day ; then drain it : salt it well with common salt and saltpetre three days, then lay the salt and head into a small quantity of water for two days. Wash it, and boil it till all the bones will come out ; remove them, and chop the head as quick as possible : but first skin the tongue, and take the skin carefully off the head, to put under and over. Season with pepper,

salt, and a little mace or alspice berries. Put the skin into a small pan, press the cut head in, and put the other skin over; press it down. When cold, it will turn out, and make a kind of brawn. If too fat, you may put a few bits of lean pork to be prepared the same way. Add salt and vinegar, and boil these with some of the liquor for a pickle to keep it.

JELLY OF PIG'S FEET AND EARS.

CLEAN and prepare as in the last article, then boil them in a very small quantity of water, till ever bone can be taken out; throw in half an handful of chopped sage, the same of parsley, and a seasoning of pepper, salt, and mace in fine powder; simmer till the herbs are scalded, then pour the whole in a melon form.

MUTTON.

OBSERVATIONS ON CUTTING AND DRESSING MUTTON.

TAKE away the pipe that runs along the bone of the inside of a chine of mutton; and if to be kept a great time, rub the part close round the tail with salt, after first cutting out the kernel.

Every kernel should be taken out of all sorts of meats as soon as brought in: then wipe dry.

For roasting, it should hang as long as it will keep, the hind quarter especially, but not so long as to taint; for whatever fashion may authorize, putrid juices ought not to be taken into the stomach.

LEG OF MUTTON.

IF roasted, serve with onion or currant-jelly sauce, if boiled with caper-sauce and vegetables.

NECK OF MUTTON

Is particularly useful, as so many dishes may be made of it; but it is not advantageous for the family. The bones should be cut short, which the butchers will not do unless particularly desired.

The best end of the neck may be boiled, and served with turnips, or roasted, or dressed in steaks, in pies, or harrico.

The scrag may be stewed in broth; or with a small quantity of water, some small onions, a few peppercorns, and a little rice, and served together. When a neck is to be boiled to look particularly nice, saw down the chine-bone, strip the rib halfway down, and chop off the ends of the bones about four inches. The skin should not be taken off till boiled, and then the fat will look the whiter.

TO DRESS HAUNCH OF MUTTON.

KEEP it as long as it can be preserved sweet by the different modes; let it be washed with warm milk and water, or vinegar, if necessary; but when to be dressed, observe to wash it well lest the outside should have a bad flavour from keeping. Put a paste of coarse flour or strong paper, and fold the haunch in; set it a great dis

tance from the fire, and allow a proportionable time for the paste; do not take it off till about thirty-five or forty minutes before serving, and then baste it continually. Bring the haunch nearer to the fire before you take off the paste, and froth it up as you would venison.

A gravy must be made of a pound and a half of loin of old mutton, simmered in a pint of water to half, and no seasoning but salt; brown it with a little burnt sugar, and send it up in the dish; but there should be a good deal of gravy in the meat, for though long at the fire, the distance and covering will prevent its roasting out.—Serve with currant-jelly sauce.

TO ROAST A SADDLE OF MUTTON.

LET it be well kept first. Raise the skin and then skewer it on again; take it off a quarter of an hour before serving, sprinkle it with some salt, baste it, and dredge it well with flour. The rump should be split, and skewered back on each side. The joint may be large or small according to the company; it is the most elegant if the latter. Being broad, it requires a high and strong fire.

BREAST OF MUTTON.

CUT off the superfluous fat, and roast and serve the meat with stewed cucumbers; or to eat cold, covered with chopped parsley. Or half broil, and then grill it before the fire; in which case cover it with crumbs and herbs,

and serve with caper-sauce.—Or if boned, take off a good deal of fat, and cover it with bread, herbs, and seasoning, then roll and boil, and serve with chopped walnuts, or capers and butter.

LOIN OF MUTTON.

ROASTED; if cut lengthways as a saddle some think it cuts better. Or for steaks, pie, or broth.

TO ROLL LOIN OF MUTTON.

HANG the mutton till tender; bone it; and lay a seasoning of pepper, alspice, mace, nutmeg, and a few cloves, all in fine powder, over it. Next day prepare a stuffing as for hare; beat the meat, and cover it with the stuffing; roll it up tight, and tie it. Half-bake it in a slow oven; let it grow cold; take off the fat, and put the gravy into a stew pan; flour the meat, and put it in likewise, stew it till almost ready; and add a glass of port wine, some catsup, an anchovy, and a little lemon pickle, half an hour before serving; serve it in the gravy, and with jelly sauce. A few mushrooms are a great improvement; but if to eat like hare, do not use these, nor the lemon pickle.

MUTTON COLLOPS.

TAKE a loin of mutton that has been well hung; and cut from the part next the leg, some

collops very thin. Take out the sinews. Season the collops with salt, pepper, and mace; and strew over them shred parsley, thyme, and two or three shallots; fry them in butter till half done; add half a pint of gravy, a little juice of lemon, and a piece of butter rubbed in flour; and simmer the whole very gently five minutes. They should be served immediately, or they will be hard.

MUTTON STEAKS

SHOULD be cut from a loin or neck that has hung; if a neck the bones should not be long. They should be broiled on a clear fire, seasoned when half done, and often turned; take them up into a very hot dish, rub a bit of butter on each, and serve hot the moment they are done.

MUTTON SAUSAGE.

TAKE a pound of the rawest part of a leg of mutton that has been either roasted or boiled; chop it extremely small, and season it with pepper, salt, mace, and nutmeg; add to it six ounces of beef suet, some sweet herbs, two anchovies, and a pint of oysters; all chopped very small; a quarter of a pound of grated bread, some of the anchovy liquor, and the yolks and whites of two eggs well beaten. Put it all, when well mixed, into a little pot, and use it by rolling it into balls of a sausage-shape and frying. If approved a little shallot may be added, or garlic, which is a great improvement.

AN EXCELLENT HOTCH-POTCH.

STEW peas, lettuce, and onions, in a very little water, with a beef or ham bone. While these are doing, fry some mutton or lamb steaks seasoned, of a nice brown; three quarters of an hour before dinner, put the steaks into a stew-pan, and the vegetables over them; stew them, and serve altogether in a tureen.

LAMB.

LEG OF LAMB.

SHOULD be boiled in a cloth to look as white as possible. The loin fried in steaks and served round, garnished with dried or fried parsley, spinach to eat with it; or dressed separately or roasted.

FORE-QUARTER OF LAMB.

ROAST it either whole or in separate parts. If left to be cold, chopped parsley should be sprinkled over it. The neck and breast together are called a scoven.

BREAST OF LAMB AND CUCUMBERS.

Cut off the chine-bone from the breast, and set it on to stew with a pint of gravy. When the bones would draw out, put it on the grid-

iron to grill; and then lay it in a dish on cucumbers nicely stewed.

LAMB STEAKS.

FRY them of a beautiful brown; when served throw over them a good quantity of crumbs of bread fried, and crimped parsley.

Mutton or lamb-steaks seasoned or broiled in buttered papers, either with crumbs and herbs, or without, are a genteel dish and eat well.

HOUSE-LAMB STEAKS, BROWN.

SEASON them with pepper, salt, nutmeg, grated lemon-peel, and chopped parsley; but dip them first into egg; fry them quick. Thicken some good gravy with a bit of flour and butter; and add to it a spoonful of port wine, and some oysters: boil it up, and then put in the steaks warm; let them beat up and serve. You may add palates, balls, or egg, if you like.

A VERY NICE DISH.

TAKE the best end of the neck of lamb, cut it into steaks, and chop each bone so short as to make the steaks almost round. Egg, and stew with crumbs, herbs, and seasoning: fry them of the finest brown, mash some potatoes with a little butter and cream, and put them into the middle of the dish raised high. Then

place the edge of one steak on another with the small bone upwards, all round the potatoes.

SOUPS AND GRAVIES.

GENERAL DIRECTIONS RESPECTING SOUPS AND GRAVIES.

WHEN there is any fear of gravy-meat being spoiled before it be wanted, season well, and fry it lightly, which will preserve it two days longer; but the gravy is best when the juices are fresh.

When soups or gravies are to be put by, let them be changed every day into fresh scalded pans. Whatever has vegetables boiled in it, is apt to turn sour sooner than the juices of meat. Never keep any gravy, &c. in metal.

When fat remains on any soup, a tea-cupful of flour and water mixed quite smooth, and boiled in, will take it off.

If richness or greater consistency, be wanted a good lump of butter mixed with flour, and boiled in the soup, will give either of these qualities.

Long boiling is necessary to give the full flavour of the ingredients, therefore time should be allowed for soups and gravies; and they are best if made the day before they are wanted.

Soups and gravies are far better when the meat is put at the bottom of the pan, and stewed, and the herbs, roots, &c. with butter, than when water is put to the meat at first; and the gravy that is drawn from the meat should be almost dried up before the water is

put to it. Do not use the sediment of gravies, &c. that have stood to be cold. When onions are strong, boil a turnip with them, if for sauce: this will make them mild.

If soups or gravies are too weak, do not cover them up in boiling, that the watery particles may evaporate.

A clear jelly of cow-heels is very useful to keep in the house, being a great improvement to soups and gravies.

SCOTCH MUTTON BROTH.

SOAK a neck of mutton in water for an hour; cut off the scrag, and put it into a stew-pan with two quarts of water. As soon as it boils, skim it well, and then simmer it an hour and a half; then take the best end of the mutton, cut it into pieces, two bones in each, take some of the fat off, and put as many as you think proper: skim the moment the fresh meat boils up, and every quarter of an hour afterwards. Have ready four or five carrots, the same number of turnips, and three onions, all cut, but not small; and put them in soon enough to get quite tender; add four large spoonfuls of Scotch barley, first wetted with cold water. The meat should stew three hours. Salt to taste, and serve altogether. Twenty minutes before serving, put in some chopped parsley.

VEAL BROTH.

STEW a small knuckle in about three quarts of water, two ounces of rice, a little salt, and a

blade of mace, till the liquor is half wasted away.

AN EXCELLENT WHITE SOUP.

TAKE a scrag of mutton, a knuckle of veal, after cutting off as much meat as will make collops, two or three shank bones of mutton nicely cleaned, and a quarter of a pound of very fine undressed lean gammon of bacon: with a bunch of sweet herbs, a piece of fresh lemon-peel, two or three onions, three blades of mace, add a dessert-spoonful of white pepper; boil all in three quarts of water, till the meat fall quite to pieces. Next day take off the fat, clear the jelly from the sediment, and put it in a saucepan of the nicest tin. If macaroni is used, it should be added soon enough to get perfectly tender, after soaking in cold water. Vermicelli may be added after the thickening, as it requires less time to do. Have ready the thickening which is to be made as follows:

Blanch a quarter of a pound of sweet almonds and beat them to a paste in a marble mortar, with a spoonful of water to prevent their oiling; mince a large slice of dressed veal or chicken, and beat it with a piece of stale white bread; to all this add a pint of thick cream, a bit of fresh lemon-peel, and a blade of mace in the finest powder. Boil it a few minutes; add to it a pint of soup, and strain and pulp it through a coarse sieve: this thickening is then fit for putting to the rest, which should boil for half an hour afterwards.

A PLAINER WHITE SOUP.

Two or three pints of soup may be made of a small knuckle of veal, with seasoning as directed in the last article; and both served together, with the addition of a quarter of a pint of good milk. Two spoonfuls of cream, and a little ground rice, will give it a proper thickness.

MACARONI SOUP.

Boil a pound of the best macaroni in a quart of good stock till quite tender; then take out half and put it into another stew-pot. To the remainder add some more stock, and boil it till you can pulp all the macaroni through a fine sieve. Then add together that, the two liquors, and a pint or more of cream, boiling hot, the macaroni that was first taken out, and half a pound of grated Parmesan cheese; make it hot, but do not let it boil. Serve it with the crust of a French roll cut into the size of a shilling.

OLD PEAS SOUP.

SAVE the water of boiling pork or beef; and if too salt, put as much fresh water to it; or use fresh water entirely, with roast beef bones, a ham or gammon-bone, or an anchovy or two. Simmer these with some good whole or split peas; the smaller the quantity of water at first, the better. Simmer till the peas will pulp through a culander: then set the pulp, and

more of the liquor that boiled the peas, with two carrots, a turnip, a leek, and a stick of celery cut into bits, to stew till all is quite tender. The last requires less time; an hour will do for it.

When ready put fried bread cut into dice, dried mint rubbed fine, pepper, and (if wanted) salt, into the tureen.

GRAVY SOUP.

WASH and soak a leg of beef: crack the bone, and set it on the fire with a gallon of water, a large bunch of sweet herbs, two large onions sliced and fried a fine brown, (but not burnt,) two blades of mace, three cloves, twenty berries of alspice, and forty black peppers. Stew till the soup is as rich as you choose; then take out the meat, which will be fit for the servants' table with a little of the gravy. Next day take off the cake of fat; which will serve for basting, or for common pie-crust. Have ready such vegetables as you choose to serve. Cut carrots, turnips, and celery, small; and simmer till tender: some people do not like them to be sent to table, only the flavour of them.—Boil vermicelli a quarter of an hour; and add to it a large spoonful of soy, and one of mushroom catsup. A French roll should be made hot, put into the soup till moist through, and served in the tureen.

OX-RUMP SOUP.

Two or three rumps of beef will make it stronger than a much larger quantity of meat without these, and form a very nourishing soup. Make it like gravy soup, and give it what flavour or thickness you like.

GRAVIES.

SHORT DIRECTIONS RESPECTING GRAVIES.

GRAVY may be made quite as good of the skirts of beef and the kidney, as of any other meat prepared in the same way.

An ox-kidney or, milt, makes good gravy, cut all to pieces, and prepared as other meats; and so will the shank-end of mutton that has been dressed, if much be not wanted.

The shank-bones of mutton are a great improvement to the richness of gravy, but first soak them well, and scour them clean.

Taragon gives the flavour of French cookery, and in high gravies is a great improvement; but it should be added only a short time before serving.

PUDDINGS.

OBSERVATIONS ON MAKING PUDDINGS AND PANCAKES.

THE outside of a boiled pudding often tastes disagreeably; which arises from the cloth not being nicely washed, and kept in a dry place. It should be dipped in boiling water, squeezed dry, and floured when to be used.

If bread, it should be tied loose; if batter, tight over.

The water should boil quick when the pudding is put in; and it should be moved about for a minute, lest the ingredients should not mix.

Batter pudding should be strained through a coarse seive, when all is mixed. In others, the eggs separately.

The pans and basins must be always buttered.

A pan of cold water should be ready, and the pudding dipped in as soon as it comes out of the pot, and then it will not adhere to the cloth.

Very good pudding may be made without eggs, but they must have as little milk as will mix, and must boil three or four hours. A few spoonfuls of fresh small beer, or one of yeast will answer instead of eggs.

Or snow is an excellent substitute for eggs, either in puddings or pancakes. Two large spoonfuls will supply the place of one egg and the article it is used in will be equally good.

Note.—The yolks and whites beaten long and separately, make the article they are put into much lighter.

ALMOND PUDDING.

BEAT half a pound of sweet and a few bitter almonds with a spoonful of water; then mix four ounces of butter, four eggs, two spoonfuls of cream warm with butter, one of brandy, a

little nutmeg, and sugar to taste. Butter some cups, half fill, and bake the puddings. Serve with butter, wine, and sugar.

BAKED ALMOND PUDDING.

BEAT fine four ounces of almonds, four or five bitter ditto, with a little wine, yolks of six eggs, peel of two lemons grated, six ounces of butter, near a quart of cream, and juice of one lemon. When well mixed, bake it half an hour, with paste round the dish.

BREAD AND BUTTER PUDDING.

SLICE bread spread with butter, and lay it in a dish with currants between each layer; and sliced citron, orange, or lemon; if to be very nice. Pour over an unboiled custard of milk, two or three eggs, a few pimentos, and a very little ratafia, two hours at least, before it is to be baked; and lard it over to soak the bread.

A paste round the edge makes all puddings look better, but is not necessary.

ORANGE PUDDING.

GRATE the rind of a Seville orange: put to it six ounces of fresh butter, six or eight ounces of lump-sugar pounded: beat them all in a marble mortar, and add as you do it, the whole of eight eggs well beaten and strained; scrape a raw apple, and mix with the rest; put a paste at the bottom and sides of the dish, and over the

orange mixture put cross bars of paste. Half an hour will bake it.

AN EXCELLENT LEMON PUDDING.

BEAT the yolk of four eggs; add four ounces of white sugar, the rind of a lemon being rubbed with some lumps of it to take the essence; then peel, and beat it in a mortar with the juice of a large lemon, and mix all with four or five ounces of butter warmed. Put a crust into a shallow dish, nick the edges, and put the above into it. When served turn the pudding out of the dish.

BAKED APPLE PUDDING.

PAKE and quarter four large apples; boil them tender with the rind of a lemon, in so little water that, when done, none may remain; beat them quite fine in a mortar; add the crumb of a small roll, four ounces of butter, melted; the yolks of five and whites of three eggs, juice of half a lemon, and sugar to taste: beat all together, and lay it in a dish with paste to turn out.

OATMEAL PUDDING.

POUR a quart of boiling milk over a pint of the best *fine* oat meal; let it soak all night: next day beat two eggs and mix a little salt, butter a basin that will just hold it; cover it

tight with a floured cloth, and boil it an hour and a half. Eat it with cold butter and salt.

When cold, slice and toast it, and eat it as oatcake buttered.

A DUTCH RICE PUDDING.

SOAK four ounces of rice in warm water half an hour; drain the latter from it, and throw it into a stew-pan, with half a pint of milk, half a stick of cinnamon, and simmer till tender. When cold, add four eggs well beaten, two ounces of butter melted in a tea-cupful of cream; and put three ounces of sugar, a quarter of a nutmeg, and a good piece of lemon-peel.

Put a light puff paste into a mould or dish, or grated tops and bottoms, and bake in a quick oven.

LITTLE BREAD PUDDING.

STEEP the crumb of a penny loaf, grated, in about a pint of warm milk; when soaked, beat six eggs white and yolks, and mix with the bread, and two ounces of butter warmed, sugar, orange-flower water, a spoonful of brandy, a little nutmeg, and a tea-cupful of cream. Beat all well and bake in a tea cup buttered. If currants are chosen, a quarter of a pound is sufficient; if not they are good without, or you may put orange or lemon-candy. Serve with pudding-sauce.

BOILED BREAD PUDDING.

GRATE white bread; pour boiling milk over it, and cover close. When soaked an hour or two, beat it fine and mix with it two or three eggs well beaten.

Put it into a basin that will just hold it; tie a floured cloth over it, and put it into boiling water. Send it up with melted butter poured over.

It must be eaten with salt or sugar.

Prunes, or French plums, make a fine pudding instead of raisins, either with suet or bread pudding.

BATTER PUDDING.

RUB three spoonfuls of fine flour extremely smooth by degrees into a pint of milk: simmer till it thickens, stir in two ounces of butter, set it to cool; then add the yolks of three eggs; flour a cloth that has been wet, or butter a basin, and put the batter into it; tie it tight, and plunge it into boiling water, the bottom upwards. Boil it an hour and a half, and serve with plain butter. If approved, a little ginger, nutmeg, and lemon-peel, may be added. Serve with sweet sauce.

BATTER PUDDING WITH MEAT.

MAKE a batter with flour, milk, and eggs; pour a little into the bottom of a pudding-dish; then put seasoned meat of any kind into

it, and a little shred onion; pour the remainder of the batter over, and bake in a slow oven.

Some liek a loin of mutton baked in batter, being first cleared of most of the fat.

PLAIN RICE PUDDING.

WASH and pick some rice; throw among it some pimento finely pounded, but not much; tie the rice in a cloth, and leave plenty of room to swell. Boil it in a quantity of water for an hour or two. When done, eat it with butter and sugar, or milk. Put lemon-peel if you please. It is very good without spice, and eaten with salt and butter.

A RICH RICE PUDDING.

BOIL half a pound of rice in water, with a little bit of salt, till quite tender, drain it dry; mix it with the yolks and whites of four eggs, a quarter of a pint of cream, with two ounces of fresh butter melted in the latter, four ounces of beef-suet or marrow, or veal-suet taken from a fillet of veal, finely shred, three quarters of a pound of currants, two spoonfuls of brandy, one of peach-water, or ratafia, nutmeg, and grated lemon-peel. When well mixed, put a paste round the edge and fill the dish. Slices of candied orange, lemon, and citron if approved. Bake in a moderate oven.

BAKED RICE PUDDING.

SWELL rice as above; then add some more milk, an egg, sugar, alspice, lemon peel. Bake in a deep dish.

AN EXCELLENT POTATOE PUDDING.

TAKE eight ounces of boiled potatoes, two ounces of butter, the yolks and whites of two eggs, a quarter of a pint of cream, one spoonful of white wine, a morsel of salt, the juice and rind of a lemon; beat all to froth; sugar to taste. A crust or not as you like. Bake it. If wanted rich, put three ounces more butter, sweetmeats and almonds, and another egg.

POTATOE PUDDING WITH MEAT.

BOIL them till fit to mash; rub through a colander, and make into a thick batter with milk and two eggs. Lay some seasoned steaks in a dish, then some batter, and over the last layer pour the remainder of the butter. Bake a fine brown.

BEEF-STEAK PUDDING.

PREPARE some fine steaks; roll them with fat between: and if you approve *shred* onion, add a very little. Lay a paste of suet in a basin, and put in the rollers of steaks: cover the basin with a paste, and pinch the edges to keep the gravy in. Cover with a cloth tied

close: and let the pudding boil slowly, but for a length of time.

BAKED BEEF-STEAK PUDDING.

MAKE a batter of milk, two eggs, and flour, or, which is much better, potatoes boiled and mashed through a colander: lay a little of it at the bottom of the the dish; then put in the steaks prepared as above, and very well seasoned; pour the remainder of the batter over them and bake it

MUTTON PUDDING.

SEASON with salt, pepper, and a bit of onion: lay one layer of steaks at the bottom of the dish; and pour a batter of potatoes boiled and pressed through a colander, and mixed with milk and an egg, over them; then putting the rest of the steaks and batter, bake it.

Batter with flour, instead of potatoes, eats well, but requires more egg, and is not so good.

PLUM PUDDING.

THE same proportions of flour and suet, and half the quantity of fruit, with spice, lemon, a glass of wine or not, and one egg, and milk, will make an excellent pudding, if long boiled.

CUSTARD PUDDING.

Mix by degrees a pint of good milk with a large spoonful of flour, the yolks of five eggs,

some orange-flour water, and a little pounded cinnamon. Butter a basin that will exactly hold it, pour the batter in, and tie a floured cloth over. Put in boiling water over the fire, and turn it about a few minutes to prevent the egg going to one side. Half an hour will boil it.

Put currant-jelly on it, and serve with sweet-sauce.

AN EXCELLENT APRICOT PUDDING.

HALVE twelve large apricots, give them a scald till they are soft; mean time pour on the grated crumbs of a penny loaf, a pint of boiling cream; when half cold four ounces of sugar, the yolks of four beaten eggs, and a glass of white-wine. Pound the apricots in a mortar, with some or all of the kernels; mix then the fruit and other ingredients together; put a paste round a dish, and bake the pudding half an hour.

PIPPIN PUDDING.

CODDLE six pippins in vine-leaves covered with water, very gently, that the inside be done without breaking the skin. When soft, skin, and with a tea-spoon take the pulp from the core. Press it through a colander; add two spoonfuls of orange-flour water, three eggs beaten, a glass of raisin-wine, a pint of scalded cream, sugar and nutmeg to taste. Lay a thin puff paste at the bottom and sides of the dish: shred very thin lemon-peel as fine as possible,

and put it into the dish; likewise lemon, orange, and citron, in small slices, but not so thin as to dissolve in baking.

A QUICK MADE PUDDING.

FLOUR and suet half a pound of each, four eggs, a quarter of a pint of new milk, a little mace and nutmeg, a quarter of a pound of raisins, ditto of currants: mix well, and boil three quarters of an hour with the cover of the pot on, or it will require longer.

SUET DUMPLINGS.

MAKE as suet pudding, and drop into boiling water, or into the boiling of beef; or you may boil them in a cloth.

COMMON PANCAKES.

MAKE a light batter of eggs, flour and milk. Fry in a small pan, in hot dripping or lard. Salt, or nutmeg and ginger, may be added. Sugar and lemon should be served to eat with them. Or, when eggs are scarce, make the batter with flour, and small beer, ginger, &c. or clean snow, with flour, and a very little milk, will serve as well as egg.

FINE PANCAKES WITHOUT BUTTER OR LARD

BEAT six fresh eggs, extremely well; mix, when strained, with a pint of cream, four oun-

ces of sugar, a glass of wine, half a nutmeg grated, and as much flour as will make it almost as thick as ordinary pancake-batter, but not quite. Heat the frying-pan tolerably hot, wipe it with a clean cloth, then pour in the batter to make thin pancakes.

PANCAKES OF RICE.

Boil half a pound of rice to a jelly, in a small quantity of water: when cold mix it with a pint of cream, eight eggs, a bit of salt, and nutmeg; stir in eight ounces of butter just warmed, and add as much flour as will make the batter thick enough. Fry in as little lard or dripping as possible.

FRITTERS.

MAKE them of any of the batters directed for pancakes, by dropping a small quantity into the pan; or make the plainer sort, and put pared apple sliced and cored into the batter, and fry some of it with each slice. Currants or sliced lemons as thin as paper, make an agreeable change. Fritters for company should be served on a folded napkin in the dish. Any sort of sweetmeats, or ripe fruit, may be made into fritters.

SPANISH FRITTERS.

Cut the crumb of a French roll into lengths, as thick as your finger, in what shape you

will. Soak in some cream, nutmeg, sugar, pounded cinnamon, and an egg. When well soaked, fry of a nice brown; and serve with butter, wine, and sugar-sauce.

POTATO FRITTERS.

Boil two large potatoes, scrape them fine; beat four yolks and three whites of eggs, and add to the above one large spoonful of cream, another of sweet wine, a squeeze of lemon, and a little nutmeg. Beat this batter half an hour at least. It will be extremely light.

Put a good quantity of fine lard in a stew-pan, and drop a spoonful of the batter at a time into it. Fry them; and serve as a sauce, a glass of white wine, the juice of a lemon, one dessert-spoonful of peach-leaf or almond-water, and some white sugar, warmed together; not to be served in the dish.

PASTRY.

RICH PUFF PASTE.

PUFFS may be made of any sort of fruit, but it should be prepared first with sugar

Weigh an equal quantity of butter with as much fine flour as you judge necessary; mix a little of the former with the latter, and wet it with as little water as will make it into a stiff paste. Roll it out, and put all the butter over it in slices, turn in the ends, and roll it thin: do this twice, and touch it no more than can be avoided. The butter may be added at twice,

and to those who are not accustomed to make paste, it may be better to do so.

A quicker oven than for short crust.

APPLE PIE.

PARE and core the fruit, having wiped the out side; which, with the cores, boil with a little water till it tastes well: strain and put a little sugar, and a bit of bruised cinnamon, and simmer again. In the mean time place the apples in a dish, a paste being put round the edge; when one layer is in, sprinkle half the sugar, and shred lemon-peel, and squeeze some juice, or a glass of cider. If the apples have lost their spirit, put in the rest of the apples, sugar, and the liquor that you have boiled. Cover with paste. You may add some butter when cut, if eaten hot; or put quince-marmalade; orange-paste, or cloves, to flavour.

Hot Apple Pie—Make with the fruit; sugar, and a clove, and put a bit of butter in when cut open.

CHERRY PIE.

SHOULD have a mixture of other fruits; currants or raspberries, or both.

MINCE PIE.

OF scraped beef free from the skin and strings, weigh 2lbs, 4lbs of suet picked and chop-

ped, then add 6 lbs, of currants nicely cleaned and perfectly dry, 3 lbs, of chopped apples, the peel and juice of two lemons, a pint of sweet wine, a nutmeg, a quarter of an ounce of cloves, ditto mace, ditto pimento. in finest powder: press the whole into a deep pan when well mixed; and keep it covered in a cool dry place. Half the quantity is enough, unless for a very large family.

Have citron, orange, and lemon-peel ready, and put some of each in the pies when made.

EGG MINCE PIES.

Boil six eggs hard, shred them small; shred down the quantity of suet; then put currants washed and pickled, one pound, or more if the eggs were large; the peel of one lemon shred very fine, and the juice, six spoonfuls of sweet wine, mace, nutmeg, sugar, a very little salt; orange, lemon. and citron, candied. Make a light paste for them.

PIPPIN TARTS.

PALE thin two Seville or China oranges, boil the peel tender and shred it fine: pare and core twenty apples, put them in a stew-pan, and as little water as possible; when half-done add half a pound of sugar, the orange-peel and juice; boil till pretty thick. When cold, put it

in a shallow dish, or patty-pans lined with paste, to turn out, and be eaten cold.

PRUNE TART.

GIVE prunes a scald, take out the stones and break them; put the kernels into a little cranberry-juice, with the prunes and sugar, simmer; and when cold make a tart of the sweetmeat.

APPLE PUFFS.

PALE the fruit, and either stew them in a stone jar or on a hot hearth, or bake them. When cold, mix the pulp of the apple with sugar and lemon-peel, shred fine, taking as little of the apple juice as you can. Bake them in a thin paste, in a quick oven; a quarter of an hour will do them, if small. Orange or quince marmalade is a great improvement. Cinnamon pounded, or orange-flour water, in change.

EXCELLENT LIGHT PUFF.

MIX two spoonfuls of flour, a little grated lemon-peel, some nutmeg, half a spoonful of brandy, a little loaf sugar, and one egg; then fry it enough, but not brown; beat it in a mortar with five eggs, whites and yolks; put a quantity of lard in a frying-pan, and when quite hot, drop a dessert-spoonful of butter at a time: turn as they brown. Serve them immediately with sweet sauce.

CARVING.

PERSONS, unaccustomed to serving at table, will, with the help of these cuts, and the instructions accompanying them, soon be able to carve well: if, at the same time, they will, as occasion offers, take notice how a good carver proceeds, when a joint is before him.

We will begin with those joints, &c. that are simple and easy to be carved, and afterwards proceed to such as are more complicate and difficult.

LEG OF MUTTON.



THIS cut represents a leg or *jigot* of boiled mutton, it should be served up in the dish as it lies, lying upon its back; but when roasted, the under side, as here represented by the letter *d*, should lie uppermost in the dish; as in a ham (which see); and in this case, as it will be necessary occasionally to turn it, so as to get readily at the underside, and cut it in the direction of *a*, *b*, the shank, which is here broken and bent for the convenience of putting it into a less pot or vessel to boil it, is not broken or bent in a roasted joint, of course should be wound round (after it is taken off the

split.) with half a sheet of writing paper, and so sent up to table, that a person carrying it may take hold of it, without greasing his hands. Accordingly, when he wishes to cut it on the under side, it being too heavy a joint to be easily turned with a fork, the carver is to take hold of the skin with his left hand, and he will thus be able to turn it readily, so as to cut it where he pleases with his right.

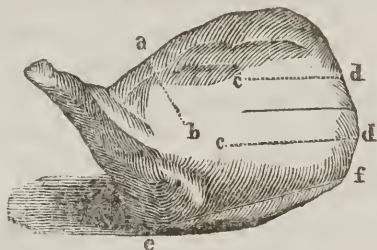
A leg of wether mutton, which is by far the best flavoured, may be readily known when bought, by the kernel, or little round lump of fat, just above the letters *a, e*.

When a leg of mutton is first cut, the person carving should turn the joint towards him, as it here lies, the shank to the left hand; then holding it steady with his fork, he should cut in deep on the fleshy part, in the hollow of the thigh, quite to the bone, in the direction *a, b*. Thus will he cut right through the kernel of fat, called the *pope's eye*, which many are fond of. The most juicy parts of the leg, are in the thick part of it, from the line *a, b*, upwards, towards *e*, but many prefer the dried part, which is about the shank or knuckles; this part is by far the coarser, but, as I said, some prefer it, and call it the venison part, though it is less like venison than any other part of the joint. The fat of this joint lies chiefly on the ridge *e, e*, and is to be cut in the direction *e, f*.

In a leg of mutton, there is but one bone readily to be got at, and that is a small one; this is the *cramp bone*, by some called the *gentleman's bone*, and is to be cut out, by taking hold of the shank-bone with the left hand, and,

with a knife, cutting down to the thigh-bone at the point *d*, then passing the knife under the cramp-bone, in the direction *d, c*, it may easily be cut out.

A SHOULDER OF MUTTON.—NO. 1.



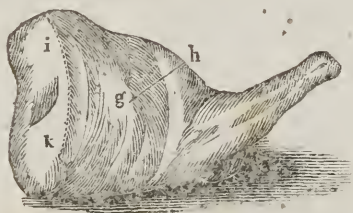
THIS plate represents a shoulder of mutton, which is sometimes salted and boiled by fanciful people; but customarily served up roasted, and laid in a dish, with the back or upper side uppermost, as here represented.

When not over-roasted it is a joint very full of gravy, much more so than a leg, and, as such, by many preferred, and particularly as having many very good, delicate, and savoury parts in it.

The shank-bone should be wound round with writing paper as pointed out in the leg, that the person carving may take hold of it, to turn it as he wishes. Now, when it is first cut, it should be in the hollow part of it, in the direction *a, b*, and the knife should be passed deep to the bone. The gravy then runs fast into the dish, and the part cut opens wide enough to take many slices from it readily.

The best fat, that which is full of kernels and best flavoured, lies on the outer edge, and is to be cut out in thin slices, in the direction *e, f*. If many are at table, and the hollow part, cut in the line *a, b*, is all eaten, some very good and delicate slices may be cut out on each side of the ridge of the blade-bone, in the direction *c, d*. The line between these two dotted lines is that in the direction of which the edge or ridge of the blade-bone lies, and cannot be cut across.

A SHOULDER OF MUTTON.—NO. 2.



ON the under side of the shoulder, as represented in this cut there are two parts very full of gravy, and such as many persons prefer to those of the upper side. One is a deep cut, in the direction *g, h*, accompanied with fat, and the other all lean, in a line from *i*, to *k*. The parts about the shank are coarse and dry, as about the knuckle in the leg; but yet some prefer this dry part, as being less rich or luscious, and of course less apt to cloy.

A shoulder of mutton over-roasted is spoiled.

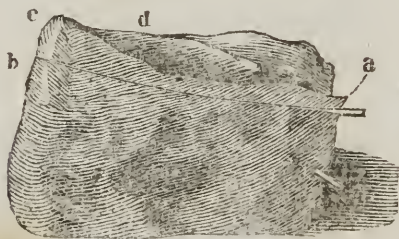
A LEG OF PORK.

WHETHER boiled or roasted, is sent up to table as a leg of mutton roasted, and cut up in the same manner; of course I shall refer you to what I have said on that joint, only that the close firm flesh about the knuckle is by many reckoned the best, which is not the case in a leg of mutton.

A SHOULDER OF PORK.

Is never cut or sent to table as such, but the shank-bone, with some little meat annexed, is often served up boiled, and called a spring; and is very good eating.

EDGE BONE OF BEEF.



In carving it, as the outside suffers in its flavour from the water in which it is boiled, the dish should be turned towards the carver, as it is here represented; and a thick slice should be first cut off, the whole length of the joint,

beginning at *a*, and cutting it all the way even and through the whole surface, from *a*, to *b*.

The soft fat, that resembles marrow lies on the back, below the letter *d*, and the firm fat is to be cut in thin horizontal slices at the point *c*; but as some persons prefer the soft fat and others the firm, each should be asked what he likes.

The upper part, as here shown, is certainly the handsomest, fullest of gravy, most tender, and is encircled with fat; but there are still some, who prefer a slice on the under side, which is quite lean. But as it is a heavy joint and very troublesome to turn, that person cannot have much good manners who requests it.

The skewer that keeps the meat together when boiling, is here shown at *a*. It should be drawn out, before the dish is served up to table; or, if it be necessary to leave a skewer in, that skewer should be a silver one

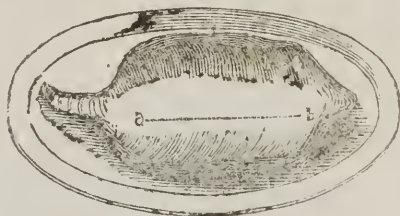
A BREAST OF VEAL, ROASTED.



THIS is the best end of a breast of veal, with the sweet-bread lying on it, and, when carved

should be first cut down quite through, in the first line on the-left, *d, c*; it should next be cut across, in the line *a, c*; from *c* to the last *a*, on the left, quite through divides the gristles from the rib-bones; this done, to those who like fat and gristle, the thick or gristly part should be cut into pieces as wanted, in the lines *a, b*. When a breast of veal is cut into pieces and stewed, the gristles are very tender and eatable. To such persons as prefer a bone, a rib should be cut or separated from the rest, in the line *d, c*, and with a part of the breast, a slice of the sweet-bread, *e*, cut across the middle.

A SADDLE OF MUTTON.



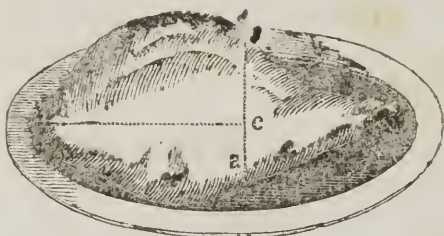
THIS is by some called a chine of mutton, the saddle being the two necks, but as the two necks are now seldom sent to table together, they call the two loins a saddle.

A saddle of mutton is a genteel and handsome dish; it consists of the two loins together, the back-bone running down the middle to the tail. Of course, when it is to be carved, you must cut a long slice in either of the fleshy parts,

on the side of the back-bone in the direction *a, b*.

There is seldom any great length of the tail left on, but if it is sent up with the tail, many are fond of it, and it may readily be divided into several pieces, by cutting between the joints of the tail, which are about the distance of one inch apart.

A HAUNCH OF VENISON.



In carving a haunch of venison, first cut it across down to the bone, in the line *d, c, a*, then turn the dish with the end *a* towards you, put in the point of the knife at *c*, and cut it down as deep as you can in the direction *c, d*; thus cut, you may take out as many slices as you please, on the right or left. As the fat lies deeper on the left, between *d*, and *a*, to those who are fond of fat, as most venison eaters are, the best flavoured and fattest slices will be found on the left of the line *c, d*, supposing the end *a*, turned towards you. Slices of venison should not be cut thick, nor too thin, and plenty of gravy should be given with them.

A SPARE-RIB OF PORK.



A spare-rib of pork is carved, by cutting out a slice from the fleshy part, in the line *a. b.* This joint will afford many good cuts in this direction, with as much fat as people like to eat of such strong meat. When the fleshy part is cut away, a bone may be easily separated from the next to it, in the line *d, b, c,* disjoining it at *c.*

A BRISKET OF BEEF.

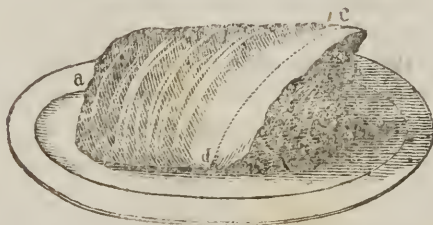


This is a part always boiled, and is to be cut in the direction *a, b.* quite down to the bone, but never help any one to the outside slice, which should be taken off pretty thick. The fat cut with this slice is a firm gristly fat, but a softer fat will be found underneath, for those who prefer it.

A BUTTOCK OF BEEF

Is always boiled, and requires no print to point out how it should be carved. A thick slice should be cut off all round the buttock, that your friends may be helped to the juicy and prime part of it. This cut into, thin slices may be cut from the top; but as it is a dish frequently brought to the table cold a second day, it should always be cut handsome and even. To those to whom a slice all round would be too much, a third of the round may be given, with a thin slice of fat. On one side there is a part whiter than ordinary, by some called the white muscle. A buttock is generally divided, and this white part sold separately as a delicacy, but it is by no means so, the meat being close and dry, whereas the darker coloured parts, though apparently of a coarser grain, are of a looser texture, more tender, fuller of gravy, and better flavoured; and men of distinguished palates ever prefer them.

A PIECE OF A SIRLOIN OF BEEF.



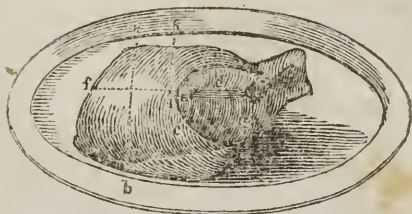
WHETHER the whole sirloin, or a part of it only, be sent to table, is immaterial, with respect

to carving it. The figure here represents part of the joint only, the whole being too large for families in general. It is drawn as standing up in the dish, in order to show the inside or under part; but when sent to table, it is always laid down, so as that the part described by the letter *c*, lies close on the dish. The part *c, d*, then lies uppermost, and the line *a, b*, underneath.

The meat on the upper side of the dish is firmer, and of a closer texture, than the fleshy part underneath, which is by far the most tender; of course, some prefer one part, and some another.

To those who like the upper side, and rather would not have the first cut or outside slice, that outside slice should be first cut off, quite down to the bone, in the direction *c, d*. Plenty of soft, marrow fat will be found underneath the ribs. If a person wishes to have a slice underneath, the joint must be turned up, by taking hold of the end of the ribs with the left hand, and raising it, until it is in the position as here represented. One slice or more may now be cut in the direction of the line *a, b*, passing the knife down to the bone. The slices, whether on the upper or under side, should be cut thin, but not too much so.

A FORE-QUARTER OF LAMB, ROASTED.

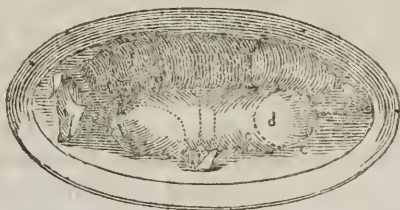


BEFORE any one is helped to a part of this joint, the shoulder should be separated from the breast, or what is by some called the coast, by passing the knife under in the direction *c, g, d, e*. The shoulder being thus removed, a lemon or orange should be squeezed upon the part, and then sprinkled with salt where the shoulder joined it, and the shoulder should be laid on it again. The gristly part should next be separated from the rib, in the line *f, d*. It is now in readiness to be divided among the company. The ribs are generally most esteemed, and one or two may be separated from the rest, in the line *a, b*; or to those who prefer the gristly part, a piece or two, or more, may be cut off in the lines *h, i, &c.* Though all parts of young lamb are nice, the shoulder of a fore-quarter is the least thought of; it is not so rich.

If the fore-quarter is that of a grass lamb and large, the shoulder should be put into another dish when taken off; and it is carved as a shoulder of mutton, which see.

A FILLET OF VEAL.

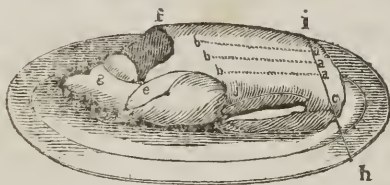
WHICH is the thick part, similar to a buttock of beef, is brought to table always in the same form, but roasted. The outside slice of a fillet is by many thought a delicacy, as being most savoury; but it does not follow, that every one likes it; each person should therefore be asked, what part they prefer. If not the outside, cut off a thin slice, and the second cut will be white meat, but cut it even and close to the bone. A fillet of veal is generally stuffed under the skirt or flap with a savoury pudding, called forced meat. This is to be cut deep into, in a line with the surface of the fillet, and a thin slice taken out; this, with a little fat cut from the skirt, should be given to each person present.

A ROAST PIG.

A roasted pig is seldom sent to table whole, the head is cut off by the cook, and the body slit down the back and served up as here represented; and the dish garnished with the chaps and ears.

Before any one is helped, the shoulder should be separated from the carcass, by passing the knife under it, in the circular direction: and the leg separated from it in the same manner, in the dotted lines *c, d, e*. The most delicate part in the whole pig, is the triangular piece of the neck, which may be cut off in the line *f, g*. The next best parts are the ribs, which may be divided in the line *a, b, &c*. Indeed, the bones of a pig three weeks old are little less than gristle, and may be easily cut through; next to these, are pieces cut from the leg and shoulder. Some are fond of an ear, and others of a chap, and those persons may readily be gratified.

A GOOSE.



LIKE a turkey, is seldom ever quite dissected, unless the company is large; but when it is, the following is the method. Turn the neck towards you, and cut two or three long slices, on each side of the breast, in the lines *a, b*, quite to the bone. Cut these slices from the bone, which done, proceed to take off the leg, by turning the goose up on one side, putting the fork through the small end of the leg-bone, press it close to the body, which, when the knife is entered at *d*, raises the joint from

the body. The knife is then to be passed under the leg in the direction *d, e*. If the leg hangs to the carcass at the joint *e*, turn it back with the fork, and it will readily separate if the goose is young; in old geese it will require some strength to separate it. When the leg is off, proceed to take off the wing, by passing the fork through the small end of the pinion, pressing it close to the body, and entering the knife at the notch *e*, and passing it under the wing, in the direction *c, b*. It is a nice thing to hit the notch *c*, as it is not so visible in the bird as in the figure. If the knife is put into the notch above it, you cut upon the neck bone, and not on the wing joint. A little practice will soon teach the difference; and if the goose is young the trouble is less great, but very much otherwise if the bird is an old one.

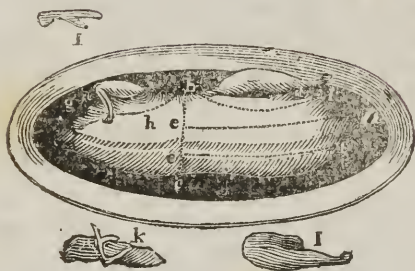
When the leg and wing on one side are taken off, take them off on the other side; cut off the apron on the line *f, e, g*, then take off the merry-thought on the line *i, h*. The neck-bones are next to be separated as in a fowl, and all other parts divided as there directed, to which I refer you.

The best parts of a goose are in the following order: the breast slices; the fleshy part of the wing, which may be divided from the pinion; the thigh-bone, which may be easily divided in the joint from the leg-bone, or drumstick, as it is called; the pinion, and next the side bones.

A GREEN GOOSE.

Is cut up in the same way, but the most delicate part is the breast and gristle, at the lower part of it.

A FOWL.



THE fowl is here represented as lying on its side, with one of the legs, a wing, and a neck-bone taken off. It is cut up the same way, whether it be roasted or boiled. A roasted fowl is sent to table trussed, except that instead of the head being tucked under one of the wings, it is cut off before it is dressed. A boiled fowl is represented below, the leg-bones of which are bent inward and tucked in within the belly; but the skewers are withdrawn prior to its being sent to table. In order to cut up a fowl, it is best to take it on your plate.

Having taken off the legs, wings, and merry-thought, it remains only to show how the other parts are divided; *k*, is the wing cut off, *i*, the leg. When the wing, leg, and merry-thought are removed, the next thing is to cut off the

neck-bones described at *l*. This is done by putting in the knife at *g*, and passing it under the long broad part of the bone in the line *g*, *h*, then lifting it up and breaking off the end of the short part of the bone which cleaves to the breast-bone. All parts being thus separated from the carcass, divide the breast from the back, by cutting through the tender-ribs on each side, from the neck quite down to the vent or tail. Then lay the back upwards on your plate, fix your fork under the rump and laying the edge of your knife in the line *b*, *c*, *e*, and pressing it down, lift up the tail or lower part of the back, and it will readily divide with the help of your knife, in the line *b*, *e*, *e*. This done, lay the croup or lower part of the back upwards in your plate, with the rump from you, and with your knife cut off the side-bones, by forcing your knife through the rump-bone, in the lines *e*, *f*, and the whole fowl is completely carved.

A BOILED FOWL.



OF a fowl, the prime parts are the wings, breast, and merry-thought, and next to these,

the neck-bones and side-bones; the legs are rather coarse: of a boiled fowl the legs are rather more tender, but of a chicken every part is juicy and good, and next to the breast, the legs are certainly the fullest of gravy and sweetest; and, as the thigh-bones are very tender and easily broken with the teeth, the gristles and marrow render them a delicacy. Of the leg of a fowl the thigh is abundantly the best, and when given to any one of your company, it should be separated from the drum-stick at the joint *i.* (see the cut, viz. "a fowl," preceding page,) which is easily done, if the knife is introduced underneath, in the hollow, and the thigh-bone turned back from the leg-bone.

A TURKEY,

ROASTED or boiled, is trussed and sent up to table like a fowl. the best parts are the white ones, the breast, wings and neck-bones. Merrythought it has none; the neck is taken away, and the hollow part under the breast stuffed with forced-meat, which is to be cut in thin slices in the direction from the rump to the neck, and a slice given with each piece of turkey. It is customary not to cut up more than the breast of this bird, and, if any more is wanted, to take off one of the wings.

FISHES.

THERE are but few directions necessary for cutting up and serving fish. In turbut the fish-knife or trowel is to be entered in the centre

or middle over the back-bone, and a piece of flesh, as much as will lie on the trowel, to be taken off on one side close to the bones. The thickest part of the fish is always most esteemed, but not too near the head or tail; and when the meat on one side of the fish is removed close to the bones, the whole back-bone is to be raised with the knife and fork, and the under side is then to be divided among the company. Turbot eaters esteem the fins a delicate part.

The rock fish and sheepshead are carved like the turbot. The latter is considered the most delicate fish of the Atlantic coast; and the former, though common, are highly esteemed, particularly those caught in fresh water.

The halibut is also frequently brought to market. The fins and parts lying near them are of a delicate texture and flavour; the remaining part of the fish is coarse.

Soals are generally sent to table two ways, some fried, others boiled; these are to be cut right through the middle, bone and all, and a piece of the fish, perhaps a third or fourth part, according to its size, give to each. The same may be done with other fishes.

DAIRY.

TO PREVENT MILK BECOMING SOUR.

To prevent milk from becoming sour and curdling as it is apt to do in the heat of summer, the milk-men of Paris add a small quantity of sub-carbonate of potash or soda, which saturating the acid as it forms, prevents the coagulating or separating of curds, and some of them practice this with so much success as to gain the reputation of selling milk that never sours. Often when the coagulation has taken place, they restore the fluidity by a greater or less addition of the fixed alkalis. The acetate which is then formed has no injurious effects, and besides, milk contains naturally a small quantity of acetate, but not an atom of really a carbonated alkali.

TO PRESERVE MILK IN A POWDER

THE Bulletin of Agricultural Science, gives the process, as discovered by a Russian Chemist, of preserving milk for any length of time. It consists in simply evaporating new milk slowly, by a very gentle heat, until it is reduced to a very dry powder, which is to be carefully preserved in bottles, well corked. When used,

the powder is dissolved in water. Milk, thus preserved, does not lose any of its richness, or peculiar flavour.

To shorten the time and diminish the labour of making Butter.

THE component parts of milk are oil, curd and whey. The oily parts constitute the cream, and the curd makes the cheese. The oily parts being specifically lighter than the other parts of the substance, ascends to the surface in the form of cream.

In winter, four or five days, according to the common practice, are necessary to produce all the cream of a pan of milk. Such cream from this tedious process not unfrequently acquires a bitter taste, which is communicated to the butter. And the churning of butter from such cream is moreover an operation of four or five hours, and sometimes longer, unless hot water be poured into the cream, which invariably injures the butter by rendering it white and insipid.

To shorten the time and to diminish the labour of making butter, and at the same time to improve its quality, there has been recently established in the Dairy House of Mr. R. Smith's Farm, called Orange, an apparatus upon the simplest principles imaginable. During the coldest weather in winter, in the course of less than twenty-four hours after the milk has been taken from the cows, sweet cream is produced, greater in quantity and richer in quality, than can be obtained in the ordinary manage-

ment in five days. So rich, indeed, is the cream, that it is churned with as much facility as is the rich cream of the Alderney cows, in the summer season. The operation of churning never exceeds twenty-five minutes. The butter from such cream has never failed to be of a fine flavour and of fine colour; and in the nature of things it never can fail to be so, unless the dairy woman should be utterly ignorant of the art of making sweet butter. The process is not a new invention. According to the principles of the system pursued at Orange, is made the sweet butter which, in England is the most admired. The part of the course of proceeding, not in common use is this: The pans, with the milk just taken from the cows, remain until a thin skim of cream is produced. They are then placed in hot water, and in about 30 minutes thereafter, all the cream, contained in the milk, is found on the surface. The cream thus obtained is managed as other rich cream is in all well conducted dairies.

The skimmed milk, consisting of curd and whey, without any of the buttery parts, has a peculiar sweetness, is extremely pleasant to the taste, and is deemed a very wholesome beverage.

TO PRESERVE BUTTER.

THERE is nothing on earth more disagreeable than bad butter. The very sight of it—to say nothing of the smell—is enough to destroy the appetite of any one, save a Hottentot or Laplan-

der. We have before us a communication to the Genesee Farmer, wherein a method of preserving butter for almost any length of time is presented. The writer states that in the *manufacture* of butter nothing further is requisite than a *strict regard to cleanliness*;—that the number of cows—their pasture—their particular breed, are of little consequence; and that the first pound of butter made by the Scythians 500 years before the Christian Era, if *properly prepared*, and hermetically sealed, would have been as palatable at the present day, as the best pound manufactured during the last season! In corroboration of this idea, he adduces the following:

‘Allow me to give one fact within my own knowledge, to support this assertion. In the summer of 1827. I had presented to me a piece of butter, 21 years old, and which, to taste and smell, was as fine and sweet as the day it was churned, and, for aught I know, even sweeter, for it was the very *cream of butter*. It had been preserved under the following circumstances; A farmer’s wife, during very hot weather, had put a large roll on a pewter plate, and tied it over with a white napkin, and lowered it into a deep well to cool and fit it for the table. In withdrawing it; the string broke, and it sunk to the bottom. Twenty-one years after, the well was cleaned, and during the operation, it got loosed from its imprisonment, rose and swam on the surface, to the no small annoyance and surprise of the man who was in the well. It was carefully drawn up as the egg of some land or sea serpent, but the good

wife soon laid the spook, and explained the mystery."

The following extract from the communication explains the method of preserving butter for any length of time. We are not sufficiently acquainted with the subject to say whether it is a new discovery, or an old one revived. We leave our agricultural friends to settle the question.

"After the butter is made, if in warm weather, the first operation, is to put it either into a cool cellar, or into cold well or spring water, till it becomes of as hard a consistency as it can readily be worked with a ladle or paddle. In small portions work out all the milk or whey that it contains, which is best done in a wooden bowl, held in a sloping direction. You may even work it with cold water, changing it till it comes off clear, except, in which case, it will need an additional quantity of salt, and if you will do it with the following compound, you will decidedly find your account in it; viz—two parts common salt, (not too fine,) one part saltpetre and one part sugar, by measure. And above all, remember that the working must be thoroughly done, if you wish to keep it a long time, and that it can only be done when cooled down to a proper temperature; for by this process you purify it of all self-acting and putrefying particles, that are capable of spontaneous change and decomposition, and it now only wants to be kept from contact with air, to render it perfectly unchangeable. To do this, take any sweet wooden cask, tub, or firkin, that has been used at least one year before,

and lost its wood flavour, or what is decidedly better, stone and earthen jars or pots; make the butter into rolls of that convenient size, that the half of one shall be fit for the table, and lay them carefully and snugly down till the vessel is full, or within a few inches; then make a brine of cold water, as strong as salt will make it, or to saturation, and cover fairly the whole of the butter. If properly packed, it will not swim as you use from it, and if kept covered, it is as good at the end of ten years as when put down

“It is important to be in rolls, to prevent its coming too much in contact with the wood, whereby it would receive air, and would be inconvenient to come at when wanted. If it is desirable to pack it in bulk and solid, for market, the best way is to work it well as above, pack down firmly, and on the top to put about a half inch of fine salt, leave it about eight or ten days, and you will find it has shrunk from the side about an eighth or quarter of an inch, then head up, and through a hole in the head fill it with brine.”

GENERAL DIRECTIONS ON CHEESE MAKING.

THE preparation of rennet is one of the first operations in cheese making, and the flavour of the cheese depends very much upon the manner in which it is prepared. For this purpose, the stomach or maw of some ruminating animal, is made use of, and that of a young calf is preferred by the best dairy women. Various operations have prevailed at different times

with regard to the use of rennet. The Jews made use of the juice of plants for coagulating milk for cheese making, as the use of rennet was strictly forbidden by the Mosaic law. The Dutch cheese of commerce is made by coagulating the milk with muriatic acid, which combining with animal alkali, contained in the milk, forms muriate of ammonia, and it is owing to the presence of this salt, that Dutch cheese has such a sharp and pungent taste, like the sal. ammoniac of the shops. When the stomach of a young calf has been taken out, which is intended to be used as rennet, the contents should be emptied out, and the bag washed very clean, and laid down into a stone jar, or some other convenient vessel, and covered with a strong brine.

It is the custom of some to save the coagulated milk or curd, contained in the stomach, when the calf was killed; but it is found extremely difficult to keep it sweet, and therefore it is now neglected at most dairies. When the maw has been about four days in the brine, it should be taken out and drained, and put into a new brine, sufficient in quantity to cover the maw; in which, there should be put, at the rate of one lemon, and one ounce of cloves, to four maws. After the rennet is thus prepared, it should be kept closely covered so as to exclude the air as much as possible; a stone jug of sufficient size is well calculated for containing it during summer, which may be closely corked.

Rennet which has been kept in this manner one year, is found to be better than such as has been newly prepared.

In whatever way the rennet is prepared, it should be done before the season for cheese making commences, in sufficient quantity for the season. It should be prepared in one vessel, that the whole may be assimilated in strength as well as flavour. One very great defect in most of our small dairies, is a want of uniformity in the quality of the cheese, and with large ones that we have never adopted any particular standard for quality, which should be known in market by a particular name.

In England, cheese making is reduced to a system, and the *kind* of cheese to be made being decided upon, the particular process for that kind is pursued; and the cheeses are produced with as much uniformity, as our bakers make their bread from the same flour; and thus cheeses are known from one end of the kingdom to the other, by name; and a person wishing to purchase of any given variety, can send for it with as little danger of being deceived, as there would be, if he sent to the bakers for a loaf of brown bread or a loaf of white.

Now this uniformity of equality, which should be known by name, in our market is what is wanted to make our cheese compare with any in the world, as no country produces finer or richer pasture for cows. The first great step towards this, is the careful preparation of the rennet, to have an article of the same strength and flavour through the whole season; and

this can only be done by having it all prepared together, before the season commences. This is so important a part of the process, that it should never be trusted to unskilful hands.

It is a very common practice for dairy women to send to the butchers and purchase dried maws. This is risking the produce of the dairy, as it is next to impossible to tell, after the maw has been dried, whether it was carefully done: and if not, no after process can restore it. And if the rennet is bad, the most skilful operation cannot produce good cheese with it. If you have not sufficient maws in preparation for the season, they should be purchased of the butcher, when first taken out, and prepared under your own direction. It has been practised by some, to make use of the stomach of hogs, as a substitute for those of calves. But this should never be done, where those of calves can be produced, as cheese made from them is very apt to have a strong, rank, disagreeable flavour, unless there has been uncommon pains in preparing them.

But let every dairy man and women remember, that after the rennet is well prepared, and the milk is in readiness, that unless there is a uniformity of process, there will not be a uniformity of product. In the first place the greatest attention is necessary as to the quantity of rennet to a given quantity of milk. This should always be determined by weight or measure—then the temperature at which the rennet is added. This should never be left to the vague manner of being determined by the hand, but by a thermometer. A thermometer

is as essential in this process as in brewing or distilling; and we should pronounce that brewer or distiller mad who attempts to scald his grain without one.

*Mode pursued in Connecticut by the best Cheese
Makers.*

FROM long experience I have found the following to be the best method of manufacturing Cheese, viz: Add the night's milk with the morning's milk, and gently heat it over a fire in a kettle to 94 degrees, then put it into a tub or vat, then add a sufficient quantity of prepared annatto to give it a handsome yellow colour, next add a sufficient quantity of rennet to make it curdle in 25 minutes—when curded, make use of a wooden knife or sword of sufficient length to reach the bottom of the tub, and chequer it all in squares of about two inches; it is important that it should all be chequered to the bottom—then let it stand until the whey appears above the curd, say from 15 to 20 minutes; then break it up carefully with the hands in such a manner as not to bruise or break the pieces of curd; next place a clean strainer on top of the whey and curd, and press it down gently so as to cause the whey to rise on top, then lade off the whey with a dish or dipper, what can be conveniently taken off in that way; then place a cheese strainer in a cheese basket over a tub, and carefully remove the curd and remaining whey into it, and cut it into slices with a thin skimmer, until the whey has mostly drained out; then bring the corners

of the strainer together and twist them so as to press the curd into a solid mass, and place the twisted corners down in the basket, and place a clean board of about one foot square on the top of it, on which place about 20 lbs. weight in order to press out the whey and consolidate the curd. After remaining in this situation about 15 minutes the curd is to be cut in pieces of about one inch square, with a knife resembling a common carving knife, then to be put into the strainer exactly as before stated, with the weight on it, and remain from 10 to 15 minutes, and then cut as last stated, and so repeated from six to ten times, until the whey has entirely done dripping from it—after which it is taken out and cut into pieces of about two inches square, and put into a wooden bowl and chopped with a chopping knife until the pieces are about the size of an indian corn. The next process is scalding, which is to be done by putting the curd into a strainer and putting it into a kettle of hot whey, heated to 126 degrees and no more, for if the whey is too hot it will ruin the cheese and make it hard and dry. While in the whey it must be stirred with the hand until the whole is equally heated; it is then taken out and put into a cheese basket over a tub, and a sufficient quantity of clean fine salt thoroughly mixed with it to give it a high salt flavour, and let it stand until it is hardly blood warm; then the corners of the strainer are twisted together as before, when it is put into the hoop designed for the purpose, and placed into the press and pressed in this instance, with the average weight of about 100

lbs. to every ten pounds of curd; to remain about half an hour in the press, then taken out and turned in the hoop and replaced in the press, and add about one third to the weight in pressing, or press it one third harder than before, and let it remain about three hours; it is then taken out and placed in a clean fine linen cloth, (pains should be taken that the cloth be perfectly smooth and no rinkles in it,) it is put again into the hoop and pressed for forty eight hours, being taken out and turned once during the time. At this pressing about one third additional weight must be added—it is then taken out and oiled, and put on the shelf to cure, where it must be turned, rubbed and oiled at least every twenty-four hours until it is thoroughly cured.

My method of preparing the oil I use on cheese, is as follows, viz: I put the whey I scald the curd in, into a tub and let it stand about twenty-four hours, and an oil arises on the surface, which I skim off and put it into a kettle and simmer it over a moderate fire, when the sediment will settle to the bottom, and I pour off a beautiful pure oil, which is fit for use.—For painting cheese I make use of the best Spanish annatto. I would here take the liberty to remark, that there is a great deal of the counterfeit Spanish annatto, manufactured in this country, and is good for nothing; and it appears to those who are not perfectly acquainted with the article, to be of good quality, and the people have been much imposed upon with it, for the last ten years. Take eight ounces of Spanish annatto, or in propor-

tion as may be wanted, and put it into three gallons of weak lye, made from pot or common ashes, and boil it until it dissolves and becomes of a bright yellow colour—thus it may be put into the milk as before described. To prepare the rennet to put into the cheese, I take the calf's second stomach immediately after killed, and take out the contents, which is called curd, which I do not save, as it is of no use, (as some have mistakenly supposed,) as by using it the cheese is injured thereby. I rinse the bag clean in cold water, and rub it all over with fine salt, and lay it away to dry; when dry I make about one gallon of brine to each bag, by mixing as much clean alum salt with hot water as the water will dissolve, and after the water is cool I put it in the bag, and when it has soaked several days it will be fit for use.

LEONARD HURLBERT.

FURTHER DIRECTIONS FOR MAKING BUTTER.

BUTTER forms an important item in the produce of the farm, as well as the necessities for the table. It is of the utmost importance to the farmer who resides near a large town, to establish his reputation for bringing to market fine Butter. This is not only profitable of itself, but gives a comparative recommendation to every thing he has to dispose of. How often do we hear the expression in families, "that they bought such an article of Mr. C. who makes the best butter that is brought into our market." When a man has established his reputation for

an article, he not only finds a readier sale for it, but gets a greater price. This is particularly the case with Butter. Who among us does not prefer paying two or three cents a pound for a fine, fresh, well-flavoured article, over the rank, marbled, greasy-looking stuff which is seen daily in our markets? Now the milk for the one was as good as for the other—the only difference being in the manner of making. For the advanced price of this article of common consumption in our market the month past, we trust that a few observations on the making of it will be read with interest by those in our neighbourhood, if not by our subscribers at a distance. Having been acquainted with the course pursued by some eminent dairymen and women who preserve their butter through the season fine and fresh, we give the following directions:—

1st. Let your dairy-room be kept cool, and not only the room but every utensil used in it be kept from any rancid, "sour, or unpleasant smell.

2d. Let the milk with the cream be put in the churn as soon as sour, before any putrid fermentation takes place.

Butter is found to be of better flavour when churned with the milk, than when the cream is churned separately. Let the churning be continued until the butter is well collected, after which it should be taken out with a ladle and set in a cool place to harden; it should then be worked over with the ladle until perfectly freed from the butter-milk. In no part of the

process should the butter be touched with the hands, but be handled entirely with the ladle and paddles. In hot weather it is sometimes worked with paddles in clear cold water, which assists in extracting the buttermilk. After the butter has been worked a sufficient time to give it, as the dealers say, a "good grain," salt it moderately. If to each pint of salt one oz. of fine sugar is added, it improves the flavour. If the butter is designed to be taken soon to market, let it be worked in small cakes of half and one pound each, handsomely marked or stamped and put by in a cool place, and taken to market in the morning. But if it is designed to be kept through the season, let it be packed in a firkin and set by in a cool place for a few days, when the butter will be found to have shrunk from the sides of the firkin: the head should be put in, and through a hole bored in it, the cavity should be filled with strong brine, the hole stopped, and the firkin reversed—by which the butter will cleave from the head which was at the bottom, and become perfectly surrounded with a streak of brine; in which situation it may be kept sweet through the season.

TO PROCURE PROFITABLE COWS.

SUPPOSE a farmer to resolve that he would keep no cow that did not hold out a good milker nine months in the year—and that did not give sixteen quarts of milk per day for two months after calving, and twelve quarts per day the next three months, and two quarts per day

the month following.—Such a cow would yield per annum 3000 quarts of milk.

Is it not practicable to have throughout the country, a common dairy stock, animals as good as the last described?

The question is submitted to farmers for consideration. The probability is that in taking some pains to get stock as good, they would get even better.

If the various modes of obtaining this object were resorted to at once and with zeal throughout the country, there would be a prodigious improvement in a very short time. No young animal of promising appearance would go to the butcher. More care would be taken of young stock. More young stock would be retained to insure a better selection of milch cows. Farmers would think more of the advantages of employing bulls of the improved breeds. Heifers should be milked with great care and very thoroughly, to get them in the habit of holding out as long milkers. If they once dry early, no care and keeping afterwards will correct this fault. Heifers with the first calf will be fed well with some additional care the last three months they are in milk, to make them hold out.

The profit of a milch cow is not generally understood. Milk is not only the most nutritious but cheapest article of food. The food necessary for a cow in full milk, does not exceed in price, one third of what is necessary in feeding for the butcher.

CONFECTIONARY.

TO CLARIFY LOAF SUGAR.

BREAK the same into a copper pan, which will hold 1-3d more, put half a pint of water to each lb. of sugar, mix 1 white of an egg to every 6 lbs.; when it rises in boiling, throw in a little cold water, which must be kept ready in case it should boil over; skim it the fourth time of rising, continue to throw in a little cold water each time till the scum ceases to rise, and strain it through a sieve, cloth or flannel bag. Save the scum, which, when a certain quantity is taken off, may be clarified. The latter skimming will do to add to fermented wines.

TO CLARIFY COARSE BROWN SUGAR.

PUT 50 pounds of coarse brown sugar into a pan, which will contain one-third more, pour in 20 pints of water, well mixed with 5 whites of eggs; pound 5 lbs. of small charcoal, mix it in the pan while on the fire, and boil it till it looks as black as ink. If it rises too fast, add cold water, strain it through a bag, and though at first it will be black, continue to strain it until it becomes quite clear; which may be seen by putting the syrup in a glass. Put it back until it comes out as fine as clarified loaf sugar.

TO IMPROVE AND INCREASE SUGAR.

To 5 lbs. of coarse brown sugar add 1 lb. of flour, and there will be obtained 6 lbs. of sugar worth 10 per cent more in colour and quantity.

TO CANDY ORANGE PEEL.

SOAK the peels in cold water, which change frequently till they loose their bitterness; then put them into syrup till they become soft and transparent. Then they are to be taken out and drained.

LEMON PEEL.

THIS is made by boiling lemon peel with sugar, and then exposing to the air until the sugar crystallizes.

TO MAKE DEVICES IN SUGAR.

STEEP gum tragacanth in rose-water, and with double refined sugar make it into a paste, and colour and mould it to fancy.

WHIPT SYLLABUB.

RUB a lump of loaf sugar on the outside of a lemon, and put it into a pint of thick cream, and sweeten it to taste. Squeeze in the juice of a lemon, and add a glass of Madeira wine, or French brandy. Mill it to a froth with a chocolate mill, take off the froth as it rises, and lay it in a hair sieve. Fill one half of the

glass with red wine, then lay the froth as high as possible, but take care that it is well drained in the sieve, otherwise it will mix with the wine, and the syllabub be spoiled.

SOLID SYLLABUB.

To a quart of rich cream put a quart of white wine, the juice of two lemons, with the rind of one grated, and sweeten it to taste. Whip it up well and take off the froth as it rises. Put it upon a hair sieve, and let it stand in a cool place till the next day. Then half fill the glasses with the scum, and heap up the froth as high as possible. The bottom will look clear and it will keep several days.

SNOW BALLS.

PAPE and take out the cores of five large baking apples, and fill the holes with orange or quince marmalade. Then take some good hot paste, roll the apples in it, and make the crust of equal thickness; put them in a tin dripping pan, bake them in a moderate oven, and when taken out, make iceing for them; let the same be a quarter of an inch thick, and set them a good distance from the fire until they become hardened, but be cautious that they are not browned.

WHIPT CREAM.

Mix the whites of eight eggs, a quart of thick cream, and half a pint of sack, sweeten

them to taste with double refined sugar. It may be perfumed with a little musk or ambergris tied in a rag and steeped in a little cream. Whip it up with a whisk, and some lemon-peel tied in the middle of the whisk. Then lay the froth with a spoon in the glasses or basins.

PISTACHIO CREAM.

BEAT half a pound of pistachio nut kernels in a mortar, with a spoonful of brandy. Put them into a pan with a pint of good cream, and the yolks of two eggs beaten fine. Stir it gently over the fire till it grows thick, and then put it into a China soup plate. When it is cold stick it over with small pieces of the nuts, and send it to table.

ICE CREAM.

To a pound of any preserved fruit add a quart of good cream, squeeze the juice of two lemons into it and some sugar to taste. Let the whole be rubbed through a fine hair sieve, and if raspberry, strawberry, or any red fruit, add a little cochineal to heighten the colour; have the freezing pot nice and clean; put the cream into it and cover it; then put it into the tub with ice beat small, and some salt; turn the freezing pot quick, and as the cream sticks to the sides, scrape it down with an ice spoon, and so on till it is frozen. The more the cream is worked to the sides with the spoon, the smoother and better flavoured it will be. Af-

ter it is well frozen take it out and put it into ice-shapes with salt and ice; then carefully wash the shapes for fear of any salt adhering to them; dip them in lukewarm water and send them to table.

Another method.—Bruise two pottles of strawberries in a basin with half a pint of good cream, a little currant jelly, and some cold clarified sugar; rub this well through the tammy, and put it in an ice pot well covered; then set in a tub of broken ice with plenty of salt; when it grows thick about the sides, stir it with a spoon, and cover it close again till it is perfectly frozen through; cover it well with ice and salt both under and over, and when it is frozen change it into a mould and cover well with ice. Sweeten a little plain cream with sugar and orange flower water, and treat it the same; likewise any other fruit, without cream, may be mixed as above. This is called water ice.

CURRANT JELLY.

TAKE the juice of red currants, 1 lb. sugar, 6 oz. Boil down.

Another method.—Take the juice of red currants, add white sugar, equal quantities.

Stir it gently and smoothly for three hours, put it into glasses, and in three days it will concrete into a firm jelly.

BLACK CURRANT JELLY.

Put to ten quarts of ripe dry black currants one quart of water; put them in a large stew-

pot, tie paper close over them, and set them for two hours in a cool oven. Squeeze them through a fine cloth, and add to every quart of juice a pound and a half of loaf sugar broken into small pieces. Stir it till the sugar is melted; when it boils skim it quite clean. Boil it pretty quick over a clear fire, till it jellies, which is known by dipping a skimmer into the jelly and holding it in the air; when it hangs to the spoon in a drop, it is done. If the jelly is boiled too long, it will loose its flavour and shrink very much. Pour it into pots, cover them with brandy papers, and keep them in a dry place. Red and white jellies are made in the same way.

APPLE JELLY.

TAKE of apple juice strained, 4 lbs. sugar 1 lb. Boil to a jelly.

STRAWBERRY JELLY.

TAKE of the juice of strawberries, 4 lbs. sugar, 2 lbs. Boil down.

GOOSEBERRY JELLY.

DISSOLVE sugar in about half its weight of water, and boil: it will be nearly solid when cold; to this syrup add an equal weight of gooseberry juice, and give it a boil, but not long, for otherwise it will not fix.

RASPBERRY CREAM.

RUB a quart of raspberries through a hair sieve, and take out the seeds, and mix it well with cream; sweeten it with sugar to your taste, then put it into a stone jug, and raise a froth with a chocolate mill. As the froth rises, take it off with a spoon, and lay it upon a hair sieve. When there is as much froth as wanted, put what cream remains in a deep China dish, and pour the frothed cream upon it, as high as it will lie on.

RASPBERRY JAM.

MASH a quantity of fine ripe dry raspberries, strew on them their own weight of loaf sugar, and half their weight of white currant juice. Boil them half an hour over a clear slow fire, skim them well, and put them into pots or glasses; tie them down with brandy papers, and keep them dry. Strew on the sugar as quick as possible after the berries are gathered, and in order to preserve their flavour they must not stand long before boiling them.

STRAWBERRY JAM.

BRUISE very fine some scarlet strawberries, gathered when quite ripe, and put to them a little juice of red currants. Beat and sift their weight in sugar, strew it over them, and put them into a preserving pan. Set them over a clear slow fire, skim them, then boil them 20 minutes, and put them into glasses.

RASPBERRY PASTE.

MAKE a quart of raspberries, strain one half and put the juice to the other half; boil them a quarter of an hour, put to them a pint of red currant juice, and let them boil altogether, till the raspberries are done enough. Then put 14 lbs. of double refined sugar into a clean pan, with as much water as will dissolve it, boil it to a sugar again; then put in the raspberries and juice, scald and pour them into glasses. Put them into a stove to dry, and turn them when necessary.

TO MAKE CONFECTIONARY DROPS.

TAKE double refined sugar, pound and sift it through a hair sieve, not too fine; and then sift it through a silk sieve to take out all the fine dust, which would destroy the beauty of the *drop*. Put the sugar into a clean pan, and moisten it with any favourite aromatic; if rose-water, pour it on slowly, stirring it with a paddle, which the sugar will fall from, as soon as it is moist enough, without sticking. Colour it with a small quantity of liquid carmine, or any other colour, ground fine. Take a small pan with a lip, fill it three parts with paste, place it on a small stove, the half hole being of the size of the pan, and stir the sugar with a little ivory or bone handle, until it becomes liquid. When it almost boils, take it from the fire and continue to stir it; if it be too moist take a little of the powdered sugar, and add a spoonful to the paste, and stir it till it is of such a

consistence as to run without too much extension. Have a tin plate very clean and smooth; take the little pan in the left hand, and hold in the right a bit of iron, copper or silver wire, four inches long, to take off the drop from the lip of the pan, and let it fall regularly on the tin plate; two hours afterwards take off the drops with the blade of a knife.

CHOCOLATE DROPS.

SCRAPE the chocolate to powder, and put an ounce to each pound of sugar; moisten the paste with clear water, work it as above, only take care to use all the paste prepared, as, if it be put on the fire a second time, it greases, and the drop is not of the proper thickness.

ORANGE FLOWER DROPS.

THESE are made as the sugar drops, only using orange flower water; or instead of it, use the essence of naroli, which is the essential oil of that flower.

COFFEE DROPS.

AN ounce of coffee to a pound of sugar will form a strong decoction; when cleared, use it to moisten the sugar, and then make the drops as above.

PEPPERMINT DROPS.

THE only requisites to make these are, extreme cleanliness, the finest sugar, and a few drops of the essence of peppermint.

CLOVE DROPS.

THESE are made as the cinnamon drops, the cloves being pounded, or the essence used. Good cloves should be black, heavy, of a pungent smell, hot to the taste, and full of oil.

GINGER DROPS.

POUND and sift through a silk sieve the required quantity of ginger, according to the strength wanted, and add it to the sugar with clear water. China ginger is the best, being aromatic as well as hot and sharp tasted.

RECEIPT FOR MAKING CURRANT WINE.

PICK your currants in a fair day, when fully ripe, say between the fifteenth and twentieth of July. Wash them in a tin culender clean from dust, then put them into a clean flannel bag, and press out their juice. Measure it, and to every gallon of pure currant juice add two gallons of cold well water, and to every gallon of this mixture add three pounds of good clear brown sugar, the purer and lighter, the better, (excepting the Havana) and to every eighteen gallons of liquor add one gallon of the best French brandy.

When the whole is well united put it into a good clean cask; fill it nearly full, and put a piece of leather over the bung hole with a small weight on it. Take care that the cask is not so full as to work over, as this would injure the liquor, and after the fermentation

has ceased, bung the cask as tight as possible. In the month of May following, it will be fit for use, or for bottling, as you choose. All this process must be done with neatness, and you cannot fail in having the first rate of currant wine.

JOHN ADLUM'S RECEIPT FOR MAKING CURRANT WINE.

TAKE two bushels of currants, sixteen gallons of water, and from seventy-two to eighty-four pounds of sugar, (according as you would have it more or less strong.) Bruise the currants, add the water, then press or squeeze out all the liquid; then add the sugar, dissolve it, and put it into your cask in the cellar to ferment; keep some of the liquor to fill up the cask as it wastes by fermentation, and in about ten days bung it up tight, and bore a gimblet hole near the bung, and put a peg in it lightly, and in about a month drive it in tight; examine it in November or the beginning of December, and it will generally be found fine and bright, when it ought to be racked into a clean cask well fumigated with sulphur, and if it is not perfectly fine and bright, *fine it*; after which it may be bottled, or again racked into another cask, as above directed; when it will keep for years in the wood, and be improving.

By taking nine pecks of currants and eighty-four pounds of sugar, a whiskey barrel full may be made, holding from thirty-two to thirty-four gallons—if the cask is not quite full, fill it with water.

This mode of making currant wine, will make it more like the foreign wine, than any other I am acquainted with; and as almost every person who has a garden, has a number of currant trees, I give this receipt to enable them to convert such as are not wanted for jelly, into a very fine wine.

NOTE—Thirteen and a half pounds of sugar produce one gallon of liquid. The currants ought to be picked on a dry day, and the wine made the same day, otherwise it will take more sugar, and will not be so neat a wine as if the whole operations were completed in a day.

DISEASES.

HEALTH.

HEALTH is certainly more valuable than money, because it is by health that money is produced; but thousands and millions are of small avail, to alleviate the protracted tortures of the gout, to repair the broken organs of sense, or resuscitate the powers of digestion.

Poverty is, indeed, an evil from which we naturally fly; but let us not run from one enemy to another, nor take shelter in the arms of sickness.

INTERMIXTURE OF FOOD.

MUCH evil arises from the too-prevailing fashion of introducing at our meals an almost indefinite succession of incompatible dishes. The stomach being distended with soup, the digestion of which, from the very nature of the operations which are necessary for its completion, would be in itself a sufficient labour for that organ, is next tempted with fish, rendered indigestible from its sauces; then with flesh and fowl; the vegetable world, as an intelligent reviewer has observed, is ransacked from the *cryptogamia* upwards; and to this miscellaneous aggregate is added the pernicious pasticcios of the pastry cook, and the complex combina-

tions of the confectioner. All these evils, and many more, have those who move in the ordinary society of the present day to contend with. It is not to one or two good dishes, even abundantly indulged in, but to the overloading the stomach, that such strong objections are to be urged; nine persons in ten eat as much soup and fish as would amply suffice for a meal, and as far as soup and fish are concerned, would rise from the table, not only satisfied but saturated. A new stimulus appears in the form of a stewed beef, or *cotelettes a la supreme*; then comes a Bayonne or Westphalia ham, or a pickled tongue, or some analogous salted, but proportionably indigestible dish, and of each of these, enough for a single meal.—But this is not all; game follows; and to this again succeeds the sweets, and a quantity of cheese. The whole is crowned with a variety of other flatulent fruits and indigestible knick-knacks, included under the name of dessert, in which we must not forget to notice a mountain of sponge cake. Thus, then, it is, that the stomach is made to receive not one full meal, but a succession of meals rapidly following each other, and vieing in their miscellaneous and pernicious nature with the ingredients of Macbeth's cauldron. Need the philosopher, then, any longer wonder at the increasing number and severity of dyspeptic complaints, with their long train of maladies, amongst the higher classes of society? These complaints are not confined to the higher classes.

But it may be said, that this is a mere tirade against quantity; against over distention

of the stomach: that it argues nothing against variety of food, provided the sum of all dishes does not exceed that which might be taken of any single one. Without availing myself of the argument so usually applied against plurality of food, that "it induces us to eat too much," I will meet the question upon fair grounds. It is evident that the different varieties of food require very different exertions of the stomach for their digestion: it may be, that the gastric juice varies in composition, according to the specific nature of the stimulus which excites the vessel to secrete it; but of this we are uncertain, nor is it essential to the argument: it is sufficient to know, that one species of food is passed into the duodenum in a chymified state, in half the time which is required to effect the same change in another. Where, then, the stomach is charged with contents which do not harmonise with each other in this respect, we shall have the several parts of the mixed mass at the same time in the different stages of digestion: one part will therefore be retained beyond the period destined for its expulsion, while another will be hurried forward before its change has been sufficiently completed. It is then highly expedient, particularly with those with weak stomachs, to eat but one species of food, so that it may be all digested and expelled at nearly the same period of time; that when the duodenal digestion has been fully established, the operations of the stomach shall have ceased.

ACHES AND PAINS.

RUB a little opodeldoc upon the part affected, two or three times a day, and wear a flannel upon it; if this does not give relief, take twenty drops of volatile tincture of guaicum, every night and morning, in a glass of spring water.

BRUISES EXTERNAL.

BATHE the parts with a little spirits of wine and camphire, which in slight cases will effect a cure; but if that fails it will be necessary to apply a poultice of stale beer grounds and oatmeal, with a little hog's lard, which must be applied fresh every day till the bruise is entirely cured.

BURNS AND SCALDS.

TAKE May butter unsalted, and white wax, of each six ounces; oil olives, half a pint; lapis calaminaris one ounce and a half; melt the wax and butter with the oil, and stir in the lapis calaminaris finely powdered, till it is too hard to let it settle. This is an excellent ointment for the above purpose, and is to be applied once a day, spread on a fine linen rag.

CHOLIC.

TAKE two ounces of Daffy's elixer, and repeat it as occasion may require; or half a

drachm of rhubarb toasted a little before the fire.

COLDS.

COLDS may be cured by lying much in bed, by drinking plentifully of warm sack-whey, with a few drops of spirits of hartshorn in it, or any other warm small liquor; living upon puddings, spoon meats, chickens, &c. and drinking every thing warm. In short, it must at first be treated as a small fever, with gentle diaphoretics; such as half a drachm of the compound powder of contrayerva, taken night and morning; or half an ounce of Mindererus' spirit may be given every night at going to rest, drinking a plentiful draught of sack-whey after it. If any cough should remain, after using this method a few days, the medicines directed under the article of *Coughs*, must be taken.

This is a much more easy, natural and certain method, than the common practice by balsamics, linctusses, and the like, which spoil the stomach, destroy the appetite, and hurt the constitution.

COSTIVENESS.

TAKE the size of a nutmeg of lenitive electuary every morning, or as often as occasion requires.

COUGH.

TAKE oil of sweet almonds and syrup of balsam of each two ounces; four ounces of barley water, and thirty drops of spirits of fal volatile; shake them well together, and take two large spoonfuls when the cough is troublesome. If this medicine does not remove the cough in a few days, it will be absolutely necessary to be blooded.

DISORDERS OF THE EYES.

AN excellent eye-water Take two grains of sugar of lead, dissolve in a quarter of a pint of spring water.

AN OINTMENT FOR THE EYES.

DIP a feather in a little ointment of tutty, and gently rub it across the eyes every night when going to sleep.

GIDDINESS.

TAKE twenty drops of tincture of castor in a glass of water two or three times in a day; or from a scruple to a drachm of power of valerian root, three or four times in a day: when this disorder proceeds from too great a fullness of the vessels of the head, bleeding will certainly give relief.

GRIPES.

TAKE half a drachm of powdered rhubarb, and toast it a little before the fire, then add a little powder of ginger to it, and mix it for one dose, to be repeated as occasion requires; or take a wine-glass of Daffy's elixer.

HEAD-ACH.

APPLY leeches behind the ears, and take twenty drops of tincture of castor in a glass of water frequently: if this fail, take a scruple of pil. Rufi every night on going to rest, for a week or ten days.

HEART-BURN.

TAKE a little chalk scraped in a glass of water, or a tea-cupful of chamomile tea.

HOOPING COUGH.

BOIL a good handful of dried coltsfoot leaves cut small, in a pint of spring water till about one half is boiled away, strain the liquor through a cloth and squeeze the herbs as dry as you can; dissolve in the liquor an ounce of brown sugar-candy, and give the child (if it be but three or four years old, and so in proportion) a spoonful of it cold or warm, according to the season of the year, three or four times a day, or oftener, till the violence of the distemper is abated; or the child may take from five to twenty drops, according to its age, of elixer

asthmaticum three or four times a day; a gentle vomit should precede the use of either of these remedies; and, in very bad cases, a blister applied to the nape of the neck will be necessary; bleeding is highly improper in this disorder.

SIGNS OF JAUNDICE.

A yellowishness of the whites of the eyes, and of the whole body, bitterness of the tongue, heaviness and lassitude, vomiting of galls, the stools almost white, and the urine of a saffron colour, tinging linen dipt therein yellow.

METHOD OF CURE.

TAKE Venice soap half an ounce, oil of anniseeds sixteen drops; mix them well together, and make it into middle sized pills. The dose is three or four, two or three times in a day: if costive, half a drachm of rhubarb must be taken in the morning twice a week.

SIGNS OF INDIGESTION.

PAIN and sense of weight in the stomach, attended with frequent belchings, heart-burn, &c.

METHOD OF CURE.

TAKE a large spoonful of tincture of hiea picra every day, an hour before dinner; or from ten to twenty drops of acid elixir of vitriol, in

a glass of water, two or three times in a day. Pyrmont and Spaw water are also very efficacious in removing this complaint.

INFLAMATIONS.

TAKE away ten or twelve ounces of blood, and repeat it if necessary; give cooling purges, and apply to the part a poultice of bread and milk, with some ointment of elder in it.

A CHOICE RECEIPT TO MAKE OPODELDOC.

TAKE of Hungary-water a pint; Castile-soap sliced, three ounces; camphire, an ounce; let them stand together in a glass closely stopped, till the soap and champhire are entirely dissolved in the hungary-water,

A PURGING DRAUGHT.

TAKE of the infusion of senna, two ounces; syrup of buckthorn, one ounce; mix them together for one dose, which may be taken in the morning fasting, three times a week, and it is a safe and sure purge; it may be taken in all cases where purging is proper.

A DOSE OF COOLING PHYSIC.

TAKE glauber's salts an ounce, manna half an ounce, dissolve them in a little boiling water for one dose, to be taken as often as occasion requires.

AN EXCELLENT POWDER TO CLEAN THE TEETH.

TAKE cream of tartar, three quarters of an ounce; choice myrrh, three drachms; dragon's blood, one drachm; mix them for a powder.

AN EXCELLENT LIP SALVE

Is made by adding a quarter of an ounce of alkanet root to the spermaceti ointment, and simmering them together a few minutes over a gentle fire.

*General directions for preserving Health, and attaining
Long Life.*

HEALTH has been ever esteemed the first of blessings, and consequently every endeavour towards its preservation, deserves encouragement. This consideration induces me to publish the following remarks, from a thorough conviction of the truth they contain; which ought with every honest man, to outweigh every timidity of its reception, and give him courage to offer, at all risques, what by well-grounded experience, appears to him, (from its nature) of general utility to mankind.

The air, which is a fluid elastic substance that surrounds us on all sides, penetrates our bodies, and yet is so fine that it escapes the sight, is rarified by heat, and condensed by cold: it is so necessary that an animal cannot live a moment without it; it serves for respiration or breathing, and is susceptible of different qualities; it may be hot, moist, cold, dry

serene, pure, dry and temperate. It is subject to variations more or less sudden, and to be mixed with impure, corrupted, infectious vapours, which are prejudicial to health. The sudden changes of the air are dangerous, whence proceed a great number of diseases which reign in the spring and autumn. Towards the approach of winter, hospitals, prisons, places where armies are encamped, places where lead is melted and the earth just thrown up near dunghills, &c. are unhealthy, on account of bad exhalations. Too hot an air occasions malignant and putrid fevers: a cold and moist constitution of the air produces coughs, pleuricies, rheumatisms, agues, &c. Hence it appears, that to preserve health, dunghills should never be placed too near the dwelling-house, since the corrupted vapours which are continually exhaling from them, cannot fail being in time prejudicial, and causing malignant fevers; for though those who are used to them, do not perceive their offensiveness, yet the cause does not cease its unwholesome activity.

From what has been observed with respect to hospitals and jails, the necessity of daily opening the windows of a bedchamber must clearly appear, to prevent the bad consequences which arise from foul and confined air; and why houses should be built rather raised above the level of the earth, than sunk beneath its surface; and the exposure of the front should be of the south-east, this being the most wholesome aspect.

Our constitution from the loss it daily sustains, requires to be repaired by aliment and drink; hence a knowledge of their general kinds and qualities is necessary, in order to make a proper choice thereof.

The principal and most general food is bread, made of wheat, barley, rye, or oats: wheaten bread is most nourishing; barley is dry; rye and oats laxative. The crust is most easy of digestion; the crumb more oily and heavy; though other mealy substances, beans, peas, potatoes, &c. nourish much, but are windy, heavy and viscid, and their constant use is apt to cause obstructions, unless a great deal of exercise is used. Rice is emollient and nourishing; but nuts, almonds and chesnuts, &c. though they abound with nutritious particles, are hard of digestion.

Pulpy, tart fruits, which abound with juice, eaten ripe, are refreshing, cooling, quench thirst, and are easy of digestion; such as strawberries, raspberries, currants, mulberries, gooseberries, cherries, apples, pears, apricots, peaches, nectarines, &c. Contrary to the common prejudice which generally prevails, that fruits are hurtful in the bloody flux, and even occasion this disorder; they may be eaten with great safety in the bloody flux, and are indeed the real preservatives against it, as is confirmed by the experience of the most eminent physicians; the cause of this disorder being an excess of flesh meats, too moist a state of the air, a succession of cold showers to violent heats, and uncleanness. In fact, this disorder has been observed less frequent, and less dangerous, when fruits were plenty and cheap;

so to escape this distemper when it is ripe, ripe fruits are to be eaten in plenty, and the quantity of flesh meats are to be lessened considerably.

Pot herbs and roots are less nourishing than the mealy substances. Lettuce, succory, endive, sorrel, purslain, &c. refresh, moisten, and are laxative. Aartichokes, cellery, cresses, asparagus, parsley, &c. are a little heating. Truffles, mushrooms, onions, garlic, pepper, mustard, and the other spices, heat very much, and are therefore less wholesome in particular constitutions.

Animal food differs very much with regard to its kind, age, manner of living, and substance.—Fish nourish the least of all animals. Young animals have the greatest plenty of soft juice, but that of the older is the most spirituous and nourishing. Yet though the juices of old animals are most gelatinous and agreeable to the taste, their flesh is the hardest, and most difficult of digestion, wild animals are light and easier of digestion than tame; their white parts contain a very juicy substance, of tender fibres, yield a soft food, and are easy of digestion.

Liquid aliments, are milk, eggs, chocolate, soups, broths, &c. Milk, requiring but little preparation in the stomach, is a good aliment for persons whose stomachs are weak, and children; new-laid eggs are very nourishing, and easy of digestion, therefore agree with exhausted and old persons. Chocolate nourishes greatly, strengthens the stomach, helps digestions, and softens sharp humours; whence it is proper for weak stomachs and consumptive persons.—

Broths and soups abound with a soft, moistening, nutritious jelly, whence they are great restoratives. Meat that is roasted, contains an excellent nourishing juice, the moist parts being dissipated by the fire. Things that are fried, are only proper for stomachs.

Drink restores the fluid parts of the body, and helps digestion; the principal and most salutary is water, of which the softest is best, which is known by its lathering easy with soap; but taken in too great quantities it relaxes and weakens the stomach, and causes many disorders. Wine in moderation strengthens the solids, and promotes digestion; but if used in excess, as well as brandy, rum, and all other spirituous liquors, hardens the fibres, weakens the nerves, destroys the appetite, and causes gout, stone, and other chronic diseases. That malt liquor is the wholesomest which is lightest and clearest; for then it does not offend the stomach, but passes readily through the emunctories, or strainers of the body, and particularly by urine; whence the best beer does not make the head ach nor grows sour on the stomach, nor causes wind. The making wholesome beer depends greatly on the softness of the water, the proper boiling of the ingredients, and a due working of the wort; for all thick, muddy, or stale beer not sufficiently boiled, disorders the head, causes wind in the stomach, obstructions, the strangury, asthmas, cholics, and ulcers in the legs. Tea, used in moderation, promotes perspiration, or the discharge by the skin, strengthens the stomach, and helps digestion; but that kind of tea which is called hyson, is improper

for persons who have weak nerves or subject to hysteric disorders. Coffee, drank after dinner, is thought to quicken digestion, and allay the fumes of wine; but if used in excess, it agitates the blood, causes watching, and promotes hemorrhages, or bleeding from the nose or other parts.

Spices, pepper, &c. are pernicious, when used to create an appetite; whence made dishes are bad; for the appetite caused by the quality and difference of the victuals, incites persons to eat more than the stomach can well digest; which causes indigestion, and frequently dangerous and fatal disorders. With respect to diet, the surest method of preserving health, is to live on plain, simple food, lightly seasoned, in that quantity which, by experience nature has been found to require. Perfect digestion is the best rule for regulating a meal, which is known from persons being more lively and brisk after a meal than before. History furnishes us with many examples of persons, who by temperance, have lived to a very advanced age, though of weakly constitutions naturally; wherefore those that are desirous of life and health, should imitate their manner of living; since excesses in eating and drinking are both extremely dangerous.

Strong, robust, young people, who use much exercise, ought to eat more than others, and may be free with the grosser kinds of food; for their stomachs being strong, the lighter foods would digest too easily, and be dissipated too soon.—Persons of a weak constitution, or who are just recovered from a disease, should use soft, light foods, agreeable to the stomach. Children,

whose stomachs are weak, and vessels fine ought to use a light, thin, soft food, easy of digestion; wherefore infants should be fed with a fluid milk, to avoid causing obstructions in their fine and delicate vessels; consequently the milk of a nurse newly brought to bed, is more proper for a new-born infant, than the milk of a nurse who has been delivered five or six months, because her milk begins to have too great a consistence. Nurses should observe an exact diet, and shun violent passions of all kinds; for they disturb digestion, and communicate their bad effects to the child. When children are weaned, they should not be accustomed to spirituous liquors, or strong food, especially salt or smoked provisions, because they are hard of digestion, and yield bad nourishment. Their diet should consist of light animal food, taken in a small quantity at a time, but often. At all times of life, but especially in old age, the constant use of salt and smoked meats tends to harden and stiffen the solid parts of the body, instead of affording nourishment; being hard of digestion: in old age the fluids are more thick, secretious, more slow, and the solids harder than in youth; therefore they require a more soft, moistening diet, easy of digestion, and not too much at a time, especially of a night.

All great changes ought to be brought about insensibly, for custom is a second nature, and an acquired habit is hard to be left off. Many persons enjoy a good state of health when their meat and drink are very indifferent, by being accustomed thereto; and are apt to be sick when they attempt to change their manner of

life. Custom confines us to certain hours, but hunger points out the best time of eating. In age, where strength is wanting, and in youth, wherein there is a great dissipation, when much is not eaten at a time, something taken between the set meals is not improper. It is necessary to observe, that when the stomach is bad, persons should not begin to eat again, till the last meal is digested.

Persons who are much fatigued should rest before eating; and in cases of distress and sorrow, the food should be light, and small in quantity, because the stomach is weak at those times.

The stomach will admit of grosser food in winter than summer. Those who eat in a hurry, without much chewing, are subject to indigestion; for indigestion depends in part on well chewing the food, and thereby intimately mixing it with the spittle; for this reason, light foods are most proper for children and old persons who have lost their teeth.

Vegetables are more difficult of digestion than animal food, therefore improper for weak stomachs. On this account, light food, such as veal, lamb, chicken, fish, are the food which best agree with delicate constitutions. On the contrary, stronger habits are more subject to be surfeited with tender and young meats, than with beef and mutton; because the degree of heat which converts beef and mutton into the true state it ought to have in the stomach, carries the tender aliment of lamb, pig, chickens, &c. into a stercorous or excremental state, before it leaves the stomach; whence fluxes, &c. In such

strong stomachs, it is necessary to mix vegetables with the animal food, that the fermentation of the one may oppose the too precipitate digestion of the other by its acidity. Hence it is obvious, that weak stomachs should abstain from vegetables, which require a greater degree of vital heat than even beef or mutton, to be converted into proper nourishment. This, I hope, will satisfactorily explain the terms of easy and difficult digestion. The stomach, which can bear beer and water, from too great a power of digestion, not from any deficiency in those faculties; therefore beef and mutton are more easy of digestion than lamb, or any of the white meats; and the contrary in weak stomachs.—Surfeits from lobsters, crabs, &c. are of the kind which rise from a too sudden change of these substances in the stomach; therefore they should be always eaten with vinegar or lemon-juice.—In fact, butter is no bad preservative against surfeits in this instance; the oil blending with the alcalious salts, forms a soap of that which would otherwise be a more acrimonious, inflammatory, and offensive substance.

Sleep restores the strength, and repairs and replaces the waste which is made by the labour and exercise of the day. The proper time for sleep is the night, when darkness and silence invite and bring it on; day sleep is less refreshing, exercise and custom should regulate its duration; six or seven hours at a time is generally thought sufficient, for excessive sleeping is attended with great inconveniencies; it blunts the senses, and renders them less fit for the duties of life.

It is beneficial to vary the scenes of life; to be sometimes in the country, sometimes in town; to go to sea, to hunt, to be at rest now and then; but more frequently to use exercise, because a sedentary life brings on many indispositions, and renders the body weak and unactive; while, on the other hand, exercise and labour strengthen it. But moderation is to be observed in all these things, and too much fatigue to be avoided; for too frequent and violent exercise overpowers the natural strength, and wastes the body. Of all kinds of exercise, riding on horseback is the most salutary. I have known many instances of persons recovering thereby from the most deplorable state, in consumptions, dropsies, colics, and nervous disorders.

In old age there is seldom sufficient strength to use bodily exercise, though so very requisite for health; wherefore frictions with the flesh-brush are necessary, at this time of life, to promote perspiration, which should be done by the person himself if possible.

I have already taken notice, that cold stops the pores of the skin, and diminishes both sweat and perspiration. To avoid this inconvenience the winter clothing should be put on pretty early in the season, and left off late; besides, care must be taken not to pass too suddenly from hot into a cold air, and to forbear drinking any thing cold, when the body has been violently heated.

The passions and affections of the mind, viz. joy, fear, anger, &c. produce very sensible effects, and, when given too much way to, have a very bad effect on health, for they affect the

stomach, hinder digestion, and chylication; whence arise many terrible disorders: wherefore it is best to keep them in bounds as much as possible, and to preserve an inward serenity, calmness, and tranquillity.

Excessive venery must be avoided, since the action of coition is very impetuous, and comes near to a convulsion. The animal heat is greatly lessened thereby, the habit of body weakened wonderfully, and the whole nervous system largely injured.

RULES FOR NURSING SICK PERSONS.

It is a great mistake to suppose that all distempers are cured by sweating; and that, to procure sweat, sick persons must take hot medicines, and keep themselves very hot; for sweating carries off the thinner part of the blood, leaving the remainder more dry, thick, and inflamed, which must evidently increase the disorder; for instead of forcing out the watery part of the blood, we should rather endeavor to increase it, by drinking freely of barley-water, balm-tea, lemonade, or any other diluting liquor made luke warm. What has been already said on the head of foul confined air, shews the absurdity of stifling the sick person with the heat of a close apartment, and a load of bed-cloths; for these two causes are sufficient alone to produce a fever, even in a healthy person. By letting a little fresh air now and then into a sick person's room, and lessening the bed-cloths, you will almost always per-

ceive the fever and oppression in some measure abate. Instead of Venice-treacle, saffron, gascoign powder, and other heating medicines, in all feverish disorders, the belly should be kept moderately open; while those medicines just mentioned render the body costive, and must necessarily have a bad effect.

Fevers are aggravated by giving the sick person food through fear of their dying of weakness; which food increases the disorder, and renders it fatal. This fear is groundless; persons in fevers may be supported, even for some weeks, with liquors only, and are stronger at the expiration of that time than if they had taken more solid nourishment; for from the first attack of a fever, whatever solid food is taken, even soup, eggs, biscuit, &c. corrupts in the stomach. If a man in perfect health was to eat stinking meat, rotten eggs, sour broth, &c. he would be seized with vomiting, load at the stomach, a purge, fever, and eruptions on the skin.

The same articles even in their soundest state, given to a person in a fever, are quickly putrified, by the heat and diseased matter already in his stomach, in a few hours produce the same effects. Is it then possible to expect the least service from them? No: as long as a sick person has a bad humour in his stomach, his weakness increases, in proportion to the food he receives; for this food being corrupted by the infected matter already there, proves incapable of affording the least nourishment; on the contrary, it becomes an additional cause of the distemper. Besides, to heat and cram

the sick person, is wholly opposite to what Nature herself indicates: the burning heat of which they complain, the dryness of the lips, tongue, and throat, the high colour of their urine, their earnest longing after cooling things, the pleasure and benefit they receive from the admission of fresh air into their chamber, are so many proofs that we ought to cool them moderately, by refreshing and diluting liquors, such as balm-tea, lemonade, &c. to promote an easy discharge of the vitiated humours. Those who have the care of sick persons, should particularly attend to this observation, that as long as there is any taste of bitterness, sickness, or desire of reaching; bad breath, heat, and feverishness, with offensive stools, and high-coloured urine made in a small quantity only, so long all flesh meats, soups, eggs, and all kind of food composed of any of them, and all heating medicines, wines, &c. are so many absolute poisons.

As long as the patient has strength for it, he should sit up out of bed an hour daily, and longer if he can bear it; but he should not be raised whilst in a sweat. His linen should be changed every other day, taking care that the clean linen is well aired; for nothing conduces more to continue the fever and light-headedness than confining the sick constantly to their bed, and preventing their changing their soiled linen.

Persons recovering from distempers, require great care and attention; in proportion to the abatement and decline of the fever, the quantity of food may be gradually increased; and when the fever is entirely gone, the sick person

may venture on a little white meat, such as chicken, rabbit, whittings flounders, or other flat fish; but salmon, eels, carp, skait, haddock, and the like, are not to be ventured on till the recovery is absolutely perfected. Soups, new-laid eggs, and a little wine diluted with water; but these are to be used with great moderation, because the stomach, being extremely weakened by the disease, is capable only as yet of a small degree of digestion; and if the quantity of nourishment exceeds its power ever so little, it will not digest, but become putrid, and delay the recovery.

To procure a complete and perfect termination of acute diseases, observe the following rules:

Let persons recovering, as well as those who are sick, take very little food at a time, and take it often.

Let their meal consist of one kind of food only, and let them chew their food well.

Lessen their quantity of drink; the best in general is wine and water; three parts water, to one part wine; for too great a quantity of liquids prevent the stomach from recovering its tone, and increases the tendency to a swelling of the legs.

Riding on horseback, as often as they are able, is absolutely necessary: the properest time for this exercise is in the forenoon.

They should eat nothing, or at most but very little, in the evening, as persons in this state are seldom quite so well towards night. Their sleep will be the less disturbed for this caution:

seven or eight hours at most, are as much as should be allotted for lying in bed.

A stool is not absolutely necessary every day; but if the costiveness exceeds the second day, a glyster should be administered; or sooner if the person feels uneasy, is restless, or has the head-ache.

If after some time they should continue very weak, and their stomach is disordered, and they have, from time to time, a little irregular fever, they should take a tea cup full of the decoction of the Peruvian bark, three or four times in a day, which may be prepared by boiling an ounce of the best bark in powder, in a quart of water, till two thirds are wasted away, and then adding to the remainder a gill of red wine.

Labouring men must by no means return to work too soon after their recovery, lest it prevent their ever getting perfectly well, and entirely recovering their lost strength.

FARRIERY.

DISEASES OF THE HORSE.

THE diseases of the horse are too much neglected, by scientific enquirers in this country. In Britain and continental Europe, especially in the latter, there are veterinary colleges where the anatomy, physiology and pathology of that useful animal are regularly taught and investigated, by professors of eminence not only in veterinary but in human medicine. Here there is no instruction of a scientific nature to be obtained, and the poor animal is handed over to the illiterate farrier, or left to the sole efforts of nature—a more fortunate event, frequently, as he thus escapes the additional mischief which is to be apprehended on the part of the ignorant pretender. The old story of experience is frequently invoked in favor of these practitioners—in forgetfulness, that if their minds are unprepared, either from ignorance or prejudice, to profit by experience—time can only confirm and multiply the enormous views under which they acted at their first outset in practice.

The diseases of the horse resemble those of the child, in the mode of their investigation—neither can depict sentiments by language, and we are left in both, to the expression elicited by partial movements—by gestures, for example.

In the child these movements are of the utmost importance in forming our judgment of the seat of the disease. The expression of the countenance is very different, when the head is affected, from what it is in abdominal derangements: this we see in the adult. Whilst the gestures—knitting of the eye brows and the carrying of the hand to the head for example, indicate a different seat of disease from the forward inclination of the body with the hand pressed to the abdomen.

The gestures of the horse as we shall see, are equally descriptive; and like those of the child, may be depended upon. In both cases they are the natural, instinctive expression of the feelings. It is our object, at present, to point out the indications of these partial movements, as determined by those whose minds have been well prepared for observation, and who have the advantage of ample experience—such as can rarely fall to the lot of the veterinary practitioners of any age. We allude to the veterinary surgeons of the Revolutionary and Imperial France.

It is not, however, our intention to describe the various diseases to which the horse is subject, but rather to offer some general remarks on the Pathology of its internal diseases—the most important which fall under the care of the veterinary surgeon, and which are but little understood by the public in general.

From what has been already said, it will have been seen, that if the detection of the internal diseases of the human body be difficult; that of the internal disorders of a horse cannot

be easy, as he can neither explain his disease, nor the seat of his pain. The Pathology of the horse is, consequently, full of difficulty, and we are frequently left in the dark regarding the precise seat of his disease. Where there are no means of detecting with certainty the part affected, we can necessarily form only conjectures and be guided by our former experience; in this case the veterinary art is totally conjectural and empirical. He who has the greatest stock of good sense and discernment will deduce the most accurate conjectures; he who has made the greatest number of observations, enlightened by a correct theory—in other words, by a knowledge of the animal economy—will adopt the safest practice and he who unites these requisites will be the best veterinarian.

Although, however, the veterinary art, or rather the knowledge of internal disease, be difficult, it must not be imagined, that it is totally an uncertain science: it has certain principles and rules on which its precepts are supported. These principles are Hippotomy, or the anatomy of the horse; Physiology, or the doctrines of the healthy functions; and Pathology, or the doctrines of the functions when in a state of disease; they are the source of all the knowledge which can be acquired in the veterinary art, and the basis on which all reasoning on the subject must rest.

In the investigation of the diseases of the horse as well as those of man, we must not reject a single symptom; for although one sign will not render us certain of the disease,

it may throw a feeble light upon it; it may form a probability; this, joined to another, will strengthen the presumption, and the union of several symptoms or of several probabilities will form a greater or less degree of certainty, according to the value of the symptoms or probabilities which constitute it. Thus, if a horse beats its flanks, we suspect that the circulation in the lungs is not free; if there be fever, the conjecture is confirmed; and, lastly, if there be sweating, dullness and difficulty of breathing, we feel satisfied that there is an inflammatory affection of the chest. This aggregate of symptoms constitute a certainty in the existence and nature of the disease.

There are, again, cases where we know that malady without fear of being deceived; when, for example, it is accompanied with symptoms that are peculiar to it, which have been constantly observed and confirmed by dissection; the asthmatic or broken-wind condition, for example can never be mistaken.

There are cases, where, without being physically certain of the disease, we are morally convinced of its seat and nature, by the union of probabilities drawn from the symptoms and circumstances of the disease; thus, as in the case already adduced, when a horse has at the same time fever, cough and difficulty of breathing, if he sweats, and be dull and languid, we are morally certain of the existence of pleurisy.

There are other cases, where, without being morally certain of the nature of the disorder, we have strong reason to suspect it; when,

for instance, there are only those symptoms present which are common to many disorders; but which are always met with, and in the same number in some particular diseases. Thus, when a horse gets up and lies down, is uneasy and beats the ground with his fore foot, we are not certain that he has the cholic, but we have strong reason to believe so.

Lastly, there are other cases where it is not possible to know the species of the disease; for instance, where the horse is merely dull, with want of appetite, without fever, sweating or any symptom proper for a particular disease; in this case we may be embarrassed, and this is the stumbling block of the veterinary art. Even in this case art affords means of relief by watching carefully the indications and attending to the symptoms as they rise.

A few general practical precepts will terminate this communication.

1. Great attention must be paid to discover the indications presented by the disease.

2. Each indication must be assiduously fulfilled: if there be inflammation or heat, it must be reduced: if there be tension, it must be relaxed: if the vessels be too full, they must be relieved: if there be relaxation, the tone of the parts must be restored.

- 3 In fulfilling these indications, great judgment must be exerted: if, for instance, there be at the same time several indications to be answered, we must begin with the most pressing, and with those which may be fulfilled without going counter to the others. Let us suppose,

for example, that we have to treat a pleurisy; or that there is cough, inflammation, fever, and difficulty of breathing. Each of the indications must be attended to; the cough requires demulcents—the inflammation, bloodletting and refrigerants; the fever, bloodletting and refrigerants; the difficulty of breathing, bloodletting. Here we begin with bloodletting, which is calculated to relieve the most urgent symptoms, and likewise the inflammatory condition on which they are dependent: the other remedies can then bring up the train. In every disease this plan should be adopted—considering each indication apart, and commencing with the most urgent.

4. When the disease is of little consequence, and is not announced by any positive symptom, strong and active remedies must be avoided. Under such circumstances it is better to wait until the disease shall manifest itself, and in the mean time to give those remedies which are adopted to prevent irritation as simple clysters or gentle purgatives.

GENERAL DIRECTIONS FOR MANAGING FARM HORSES.

CART-COLTS are taken in hand, at two years old; and it ought ever to be made a point, *to break them to back, and to go in the shafts*. Saddle-colts may be broke at three years old, or the autumn preceding; and it is of the utmost consequence to give them a good mouth, although some persons affect to slight it. Learn them to canter handsomely, and, if of sufficient size, they may be put to plough, the labour not

being hard. Being quiet in harness, and good canterers, may greatly add to their value.

It is advantageous, to mix one-fourth good straw, with the green food given to labouring horses, or, indeed, any cattle, in summer; their work being hard, hay would be preferable to straw. For hard-food clover-hay cut into chaff, instead of straw, renders less corn necessary. A cart-horse labouring hard, will require more than a peck of oats per day, with the addition of nearly one-fourth well dried beans. I have used ground corn for horses, many years, never observing any ill effects, but always taking for granted the good ones usually attributed to the practice.

The heels, legs, bend of the knee, and hock, the twist under the flank; in short, all the parts out of sight, of cart-horses, whilst standing in, should be kept perfectly free from dirt and scurf, and the skin supple. the parts more in sight *will take care of themselves*. In a deep country, it is much the better practice, notwithstanding the prejudice to the contrary, to trim their legs coach horse mode.

Never suffer a pretended knowing carter to doctor horses, or to give them specifics for making their coats fine:—Nip all such mischiefs in the bud. Suffer not a parcel of silly fellows to strain the cart-horses to pieces at *dead pulls*;—keep their vigour for useful purposes.—Many very excellent horses neither will, nor have it in their power, *from certain concealed natural defects*, to draw dead pulls; this hint is given from long experience, and from having often witnessed,

indeed practiced, much shameful and useless cruelty in that way.

The coarse garbage, with which farm-horses are generally stuffed, profitably, or otherwise, is the real cause of the frequent occurrence among them, of blindness, grease, and cholic, more particularly the last, which, with care, might be prevented from happening so frequently.—The remedy lies in physic, once or twice a year; either the regular aloetic dose, or salts given in pails of warm water, or sulphur and cream of tartar, one third of the latter mixed in the corn. All horses kept in the stable, become more or less internally loaded; and it is an error to suppose cart-horses are not equally benefitted with others, by purging physic.

Suffer not the blacksmith to cut any thing, excepting that which is loose and rotten, from the sole, bars, and frog, of your horse's foot:—these are the defence nature has given to the feet, and labour will wear it down full fast. The foot preserved strong and sound, will require less iron, and smaller nails. It is a great advantage, when a horse can go upon his frogs, that is to say, when he can bear them to touch the ground at every tread.

Chief points in a farming cart-horse:—*Neck not long, nor too thick;—short legs, rather flat than round and gummy; fore feet even, not too distant;—wide chest;—strong, but not high shoulders;—considerable length of waist, supported by a wide loin;—quarters full, and rather raised;—strong muscular thigh;—size, fifteen one inch, to sixteen hands high.*—Being somewhat fore-low giving them an advantage in

draught; and a moderate length of waist, assures speed in the walk, very often an object of consequence upon a farm. Care being taken to breed their heads light, handsome and well set on, the stallions, or mares, with a proper cross, may produce high priced coach or cavalry horses.

To raise a breed of the above description for sale, would pay exceedingly well, beyond all doubt. To breed a good horse costs no more, except of skill, than to breed a bad one.

A CURE FOR SORE BACKS.

THE best method of curing sore backs, and I have frequently experienced the efficacy of it, is to *dissolve half a pint of blue vitrol in a pint of water*, and daub the injured parts with it, four or five times a day. The best captain of cavalry I know, is not he who only fights his troop well in action; but he who has his horses in the best condition, and has the fewest sore backs in his troop. What a laudable example the German hussars, and other cavalry shew us in the care of their horses. The attention they pay to their horses is wonderfully meritorious.

No horse, out in all weathers, and standing still in the streets, should be curried or brushed.

I never allow a horse of mine, which is out in all weather, and frequently stands for hours in the street, and very often in rain, to be curried or brushed: currying or brushing thins their coats and makes them more liable to catch cold.

Nor do I ever allow them to be covered in the stable with a cloth. They are rubbed well with a whisp of straw, and then with a coarse hair-cloth; this makes the blood circulate, and it is fully sufficient. I am thoroughly persuaded, no cavalry horse on service, at the picket cord, should ever be curried or brushed; indeed, a couple of curry-combs may be kept in each troop, in case a horse may have some hard dirt caked on, which cannot otherwise be rubbed off.

NO HORSE SHOULD STAND ON LITTER IN THE DAY TIME.

I never allow a horse to stand on litter in the day time in the stable. I speak not of running horses or hunters. Provided the straw be not perfectly dry and clean, it perishes the feet.—Look to horses which stand upon half-perished litter, as one half of them do at livery stables; you will find their feet full of dirty, half-perished litter. This materially injures the feet.

AN INFALLIBLE LOTION FOR BLOWS, BRUISES, AND SPRAINS.

For the present, I have nearly done with the treatment of horses; but will give you one receipt more, which, *of all the medicines* in the world, it is *the most efficacious*. It is as beneficial to man and woman, as it is both to horses and dogs. You should never be without a bottle of it in the house. It is infallible of its cure of all bruises, blows, and gentle strains, which horses and dogs receive in the field. I do not

mean to say that it will cure a horse, which is absolutely let down in the sinews; but, in every other respect, it is a sovereign remedy. I have had, in the course of time, four or five servants who have slipped down stairs, and have terribly bruised their legs, and sprained their ancles. I have also given it to numbers who have received injuries in their limbs from falls, blows or bruises, and I never have known it to fail. It was given to me by an old huntsman, thirty years ago. It may even be used when the skin is broken, or rubbed off; not absolutely on the wound itself, because it will occasion great pain; but it may be rubbed in well all round the wound. Take of spirits of wine, eight ounces; dissolve one ounce of camphor first, in the spirits of wine, then add one ounce of oil of turpentine, one ounce of spirit of salt ammoniac; oil of origanum half an ounce, and one large table spoonful of liquid laudanum. It must be well rubbed in with the hand, for *full a quarter of an hour*, every time it is used; which must be four times each day. You will be astonished at its efficacy when you try it

HOW TO KNOW A STRONG AND GOOD EYE FROM A WEAK ONE.

I will now inform you how for certain, you may know whether a horse has a strong and good eye, or a weak eye, and likely to go blind. People in general turn a horse's head to a bright light to examine his eyes. You can know very little, by this method, what sort of an eye the horse has, unless it be a very defective one

You must examine the eye first, when the horse stands with his head to the manger. Look carefully at the pupil of the eye in a horse; it is of an oblong form—carry the size of the pupil in your mind, then turn the horse about, bring him to a bright light, and if, in the same light, the pupil of the eye contracts, and appears much smaller than it was in the darker light, then you may be sure the horse has a strong, good eye—but, provided the pupil remain nearly of the same size as it appeared in the darker light, the horse has a weak eye; therefore, have nothing to do with him. There are contracting and dilating muscles in the eye, which will plainly show you, provided you follow my instructions, in what state the eye is, whether it be a strong or a weak one.

Many horses are attacked in their eyes when coming five years old. This is vulgarly called moon-blindness. It is a periodical blindness, which comes and goes, sometimes three or four times; but if it ever comes above once, I imagine his eyes to be in great danger.

OF WORMS BEING IN A HORSE'S STOMACH.

I have often read, in farmer's works, and in those of veterinary surgeons, of worms in a horse's stomach—for my own part, I cannot credit it; for the peristaltic motion of the stomach is so powerful, and the heat so great, when the horse is alive, that I am of opinion that worms may as well live between two mill-stones, when at work, or in a hot baker's oven, as in a horse's stomach—and this I have a right to

say, that, when the motion of the stomach ceases, which it does with the life of the animal, in half a minute, worms may move from their former quarters into the stomach, particularly if the stomach be replete with food. Certain we are, that no person has ever seen the stomach of a horse when alive; therefore I am justified in saying, that I imagine it must be conjecture, and that I give a good reason for my opinion: however, I will not assert, or be positive in an opinion which may be contrary to that of more experienced men.

The four last articles are from an experienced farrier.

WOUNDS IN THE SKIN OF HORSES.

WOUNDS in the skin of horses will generally be cured by lint dipped in Friar's Balsam. I have already mentioned the great benefit of nitre in inflammatory fevers. Osmer relates a history of a horse, which he asserts to be a fact:—that a horse with the mad staggers on him, broke out of the stable at a powder-mill, and got to a cistern of water in which a large quantity of salt-petre had been dissolved. He drank plentifully of it, after which he became immediately well, without any thing else being given him. He mentions this, to shew the good effects of nitre in fevers.

If Daffy's Elixer be too expensive, give Philonium Romanum.

I have already mentioned, that a bottle of Daffy's Elixir is the best medicine I ever tried for a horse taken with the cholic, or gripes, from

drinking cold water, &c. &c. But as Daffy's Elixir is expensive, you may give him one ounce of philonium romanum—repeat the dose in one hour, if the horse be not relieved.

Two sorts of Cholic and Gripes; how to distinguish them, and to cure both.

You must be particularly careful to distinguish, for there are two sorts of cholic, or gripes; the one proceeds from the horse being chilled by cold water, &c.; the other proceeds from costiveness and inflammation of the bowels. In the *latter* disorder you must be guided by feeling the horse's pulse, to ascertain whether it be attended with any degree of fever. I have told you already how to feel a horse's pulse, and how often in a minute, a horse's pulse, free from fever, should beat. In this latter disorder, the dung must be constantly raked away, as it falls into the rectum. Give the horse sweet oil inwardly, to relax the intestines, and to supple the hard excrement, which, from dryness, may be lodged in the gut, which *is frequently the cause of this complaint*. Give him every four hours, one ounce of the common purging salts. In this case, nitre is not to be given, as it acts mortally as a diuretic. If the horse be in considerable pain, he should be bled, and, if the pain be very violent, bleeding should be repeated, because there will be inflammation.

INFLAMMATION OF THE BOWELS.

THERE are two varieties of this malady. The first is the inflammation of the external coats of

the intestines, accompanied by considerable fever and costiveness. The second is that of the internal or mucous coat, usually the consequence of an over-dose of physic, and accompanied by violent purging. We will here speak of the first of these affections. It has been divided into inflammation of the peritoneal coat, and that of the muscular: but the causes, symptoms, and treatment of both are so much alike, that it would be raising unnecessary difficulties to endeavour to distinguish between them. Inflammation of the external coats of the stomach, whether the peritoneal or muscular, or both, is a very frequent and fatal disease. It speedily runs its course, and it is of great consequence that its early symptoms should be known. If the horse has been carefully observed, restlessness and fever will have been seen to precede the attack; in many cases a direct shivering fit will be observed; the mouth will be hot, and the nose red. The horse will soon express the most dreadful pain by pawing, striking at his belly, looking wildly at his flanks, groaning and rolling. The pulse will be quickened and small; the ears and legs cold; the belly tender and sometimes hot; the breathing quickened; the bowels costive; and the horse becoming rapidly and fearfully weak.

It may be useful to give a short table of the distinguished symptoms of cholic and inflammation of the bowels, because the treatment recommended for the former would often be fatal in the latter.

CHOLIC.

Sudden in its attack.

Pulse rarely much quicker in the early period of the disease, and during the intervals of ease: but evidently fuller.

Legs and ears of the natural temperature.

Relief obtained from rubbing the belly.

Relief obtained from motion.

Intervals of rest.

Strength scarcely affected.

INFLAMMATION OF THE BOWELS.

Gradual in its approach, with previous indications of fever.

Pulse very much quickened, but small, and often scarcely to be felt.

Legs and ears cold.

Belly exceedingly tender and painful to the touch.

Motion evidently increasing the pain.

Constant pain.

Rapid and great weakness.

The causes of this disease are, first of all, and most frequently, sudden exposure to cold. If a horse that has been highly fed, carefully groomed, and kept in a warm stable, be heated with exercise, and have been for some hours without food; and in this state of exhaustion be suffered to drink freely of cold water, or be drenched with rain, or have his legs and belly washed with cold water an attack of inflammation of the bowels will often follow. An over-fed horse subjected to severe and long-continued exertion, if his lungs were previously weak, will probably be attacked by inflammation of them; but if the lungs were sound, the bowels will on the following day be the seat of disease. Stones in the intestines are an occasional cause of inflammation, and cholic neglected, or wrongly treated, will terminate in it.

The treatment of inflammation of the bowels, like that of the lungs, should be prompt and energetic. The first and most powerful means of cure will be bleeding. From six to eight or ten quarts of blood should be taken as soon

as possible, and the bleeding repeated to the extent of four or five quarts more if the pain be not relieved, and the pulse have not become rounder and fuller. The speedy weakness that accompanies this disease should not deter from bleeding largely. It is the weakness that is the consequence of violent inflammation of these parts, and if that inflammation be subdued by the loss of blood, the weakness will disappear. The bleeding should be effected on the first appearance of the disease, for there is no malady that so quickly runs its course.

Next to bleeding will follow clysters. Although the bowels are usually confined, we cannot administer a stronger purgative; the intestines already in far too irritable a state. The clyster may consist of warm water, or very thin gruel, in which half a pound of Epsom salts, or half an ounce of aloes has been dissolved, and too much fluid can scarcely be thrown up. If the common ox-bladder and pipe be used, it should be frequently replenished: but with Reed's patent pump, sufficient may be injected to penetrate beyond the rectum, and reach to the colon and cœcum, and dispose them to evacuate their contents. The horse may likewise be encouraged to drink plentifully of warm water or thin gruel; and draughts, each containing a couple of drachms of dissolved aloes, may be given every six hours, until the bowels are freely opened.

Next, it will be prudent to endeavour to excite considerable external inflammation, as near as possible to the seat of internal disease, and therefore the whole of the belly should be blis-

tered. In a well-marked case of this inflammation, no time should be lost in applying fomentations, but the blister be at once restored to. The tincture of Spanish flies, whether made with spirit of wine or turpentine, should be well rubbed in. The legs should be well bandaged, to restore the circulation to them, and thus lessen the flow of blood to the inflamed part, and for the same reason the horse should be warmly clothed, but the air of the stable or box should be cool.

No corn or hay should be given during the disease, but bran-mashes and green meat if it can be produced. The latter will be the best of all food, and may be given without the slightest apprehension of danger. When the horse begins to recover, he may get a handful of corn two or three times in a day, and, if the weather be warm, may be turned into a paddock for a few hours in the middle of the day. Clysters of gruel should be continued for three or four days after the inflammation is beginning to subside, and good hand-rubbing applied to the legs.

WORMS.

WORMS of different kinds inhabit the intestines; but except when they exist in very great numbers, they are not so hurtful as is generally supposed, although the groom or carter may trace to them hidebound, and cough, and loss of appetite, and gripes, and megrims, and a variety of other ailments. Of the organ or mode of propagation of these parasitical animals we will say nothing; neither writers on

medicine, nor even on natural history, have given us any satisfactory account of the matter.

The long white worm (*lumbricus teres*) much resembling the common earth-worm, and, being from six to ten inches long, inhabits the small intestines. It is a formidable looking animal, and if there are many of them they may consume more than can be spared of the nutritive part of the food or the mucus of the bowels; and we think that we have seen a tight skin, and rough coat, and tucked up belly, connected with their presence. They have then, however, been voided in large quantities, and when they are not thus voided we should be disposed to trace these appearances to other causes. A dose of physic will sometimes bring away almost incredible quantities of them. Calomel is frequently given as a vermifuge. The seldomer this drug is administered to the horse the better. It is the principal ingredient in some quack medicines for the expulsion of worms in the human subject, and thence, perhaps, it came to be used for the horse, but in him we believe it to be inert as a vermifuge, or only useful as quickening the operation of the aloes. When the horse can be spared, a strong dose of physic is an excellent vermifuge, so far as the long round worm is concerned; but perhaps a better medicine, and not interfering with either the feeding or work of the horse, is two drachms of emetic tartar, with a scruple of ginger, made into a-pall, with linseed meal and treacle, and given every morning half an hour before the horse is fed.

A smaller, darker coloured worm, called the needle worm, or *ascaris*, inhabits the large intestines. Hundreds of them sometimes descend into the rectum, and immense quantities have been found in the cœcum. These are a more serious nuisance than the former, for they cause a very troublesome irritation about the fundament, which sometimes sadly annoys the horse. Their existence can generally be discovered, by a small portion of mucus, which hardening, is converted into a powder, and is found about the anus. Physic will sometimes bring away great numbers of these worms but when there is much irritation about the tail, and much of this mucus indicating that they have decended into the rectum, an injection of a quart of linseed oil, or an ounce of aloes dissolved in warm water, will be a more effectual remedy

The tape worm is seldom found in the horse.

PHYSICKING.

This would seem to be the most convenient place to speak of physicking horses, a mode of treatment necessary under various diseases, but which has injured the constitution of more horses, and in fact absolutely destroyed more of them, than any other thing that can be mentioned. When a horse comes from grass to hard meat, or from the cool open air to a heated stable, a dose of physic or even two doses may be useful to prevent the tendency to inflammation which must be the necessary consequence of so sudden and great a change. To a horse that is becoming too fat, or has surfeit,

or grease, or mange, or that is out of condition from inactivity of the digestive organs, a dose of physic is often most serviceable; but we do enter our protest against the periodical physicking of all horses in the spring and the autumn, and more particularly against that severe system which is thought to be necessary to train them for work, and the absurd method of treating the horse when under the operations of physic.

A horse should be carefully prepared for the action of physic. Two or three bran mashes given on that or the preceding day are far from sufficient, when a horse is about to be physicked, whether to promote his condition or in obedience to custom. Mashes should be given until the dung becomes softened; a less quantity of physic will then suffice, and it will more quickly pass through the intestines, and be more equally diffused over them. Five drachms of aloes, given when the dung has been thus softened, will act much more effectually, and much more safely than seven drachms, when the lower intestines are obstructed by hardened fæces.

On the day on which the physic is given, the horse should have walking exercise, or may be gently trotted for a quarter of an hour twice in the day; but after the physic begins to work, he should not be moved from his stall. Exercise then would produce gripes, irritation, and possibly dangerous inflammation. The common and absurd practice is to give the horse most exercise after the physic has begun to operate.

A little hay may be put into the rack; as much mash may be given as the horse will eat, and as much water, with the coldness of it taken off, as he will drink. If, however, he obstinately refuses to drink warm water, it is better that he should have it cold, than to continue without taking any fluid; but he should not be suffered to take more than a quart at a time, with an interval of at least an hour between each portion.

When the purging has ceased, or *the physic is set*, a mash should be given once or twice every day until the next dose is taken, between which and the *setting* of the first there should be an interval of a week. The horse should recover from the languor and debility occasioned by the first dose, before he is harassed by a second.

Eight or ten tolerably copious motions will be perfectly sufficient to answer every good purpose, although the groom or the carter may not be satisfied unless double the quantity are procured. The consequence of too strong purgation will be, that a lowness and weakness will hang about the horse for many days or weeks, and inflammation will often ensue from the over-rotation of the intestinal canal.

Long continued custom has made ALOES the almost invariable purgative of the horse, and very properly so: for there is no other at once so sure and safe. The Barbadoes aloes, although sometimes very dear, should alone be used. The dose, with a horse properly prepared, will vary from five to seven drachms.

The preposterous doses of nine, ten, or even twelve drachms are, happily for the horse, generally abandoned. Custom has assigned the form of a ball to physic, but good sense will in due time introduce the solution of aloes, as acting more speedily, effectually, and safely.

The only other purgative on which dependence can be placed is the *croton*. The farina or meal of the nut is used; but from its acrimony it should be given in the form of ball, with linseed meal. The dose varies from a scruple to half a drachm. It acts more speedily than the aloes, without the nausea which they produce; but it causes more watery stools, and consequently more debility.

Linseed oil is an uncertain but safe purgative, in doses from a pound to a pound and a half. Olive oil is more uncertain but safe; and castor oil, that mild aperient in the human being, is both uncertain and unsafe. Epsom salts are inefficacious, except in immense doses of a pound and a half, and then not always safe.

TO DISCOVER A FEVER IN A HORSE.

WOULD you know when a horse is in a fever, there is a pulse a little above the knee in the inside of his leg, which may be felt in thin-skinned horses; but the best and surest way is, to put your hand on his nostrils, and discover it by the heat of his breath. You may likewise discover the pulse by pressing the artery under the jaw with your finger.

TO STOP VIOLENT PURGINGS.

WHEN a purge works too long or too strong upon him, which will weaken him too much, give him an ounce of Venice treacle, in a pint of warm ale, and repeat it, if needful, to blunt the force of the aloes. Or the following: opium one drachm, ipecacuanha two drachms, linseed powder half an ounce, honey sufficient to form the ball.

STAGGERS.

Do not let your horse stand too long without exercise, it fills his belly too full of meat, and his veins too full of blood. From hence the staggers, and many other distempers.

Cure.—The cure is to bleed and purge.

GRAZING.

THIN-SKINNED horses, that have been well kept and clothed, should never be turned to grass above three months in the year, viz. from the beginning of June to the end of August.

Thick-skinned horses have strong coats, which keep out the weather, and, if well fed, will lie abroad, and endure hard hunting all the year, better than stable horses. For walking about to feed prevents stiffness in their limbs, and treading in the grass keeps their hoofs moist and cool; but they should have a novel to come to at night, or when it snows or rains.

All horses should be gently purged when taken up from grass, as it cleanses the intestines of a load of crude vegetable matters, prepare them for hard food and work, and prevents a number of diseases.

PURGATIVE BALL FOR FEVERS.

Aloes, seven drachms,
Castile soap four drachms,
Oil of carraway six drops,
With mucilage sufficient to form the ball
for one dose.

PURGATIVE GLYSTER.

Water gruel from six to seven quarts,
Table salt one ounce to each quart.

FEVER POWDER NO. 1.

Powdered nitre one ounce,
Emetic tartar two drachms,
Mix, for one dose.

NO 2.

Powdered nitre six drachms,
Camphor two drachms,
Calx of antimony one and a half drachms.

FEVER DRINK.

Cream of tartar one ounce,
Turmeric one ounce,
Diapente one ounce.

LAXATIVE DRAUGHT

Aloes and carbonate of potash, each two drachms,

Mint water four ounces.

ASTRINGENT MIXTURES FOR DIARRHŒA, LAX, OR SCOURING.

NO. 1.

Powdered ipecacuanha one drachm,

Powdered opium half a drachm,

Prepared chalk two ounces,

Boiled starch one pint.

NO. 2.

Suet four ounces, boiled in eight ounces of milk,

Boiled starch six ounces,

Powdered alum one drachm.

NO. 3.

The following has been very strongly recommended in some cases for the lax of horses and cattle.

Glauber salts two ounces,

Epsom salts one ounce,

Green vitriol four grains,

Gruel half a pint.

NO. 4.

When the lax or scours at all approaches to dysentery, or molten grease, the following drink should be given.

Castor oil four ounces,

Glauber salts two ounces,

Powdered rhubarb half a drachm,

Powdered opium four grains,

Gruel one pint.

ASTRINGENT BALL FOR DIABETES.

CATECHU [Japan earth] half an ounce,
Powdered alum half a drachm,
Sugar of lead ten grains,
Conserve of roses to make a ball.

WASH FOR CRACKS IN THE HEELS, WOUNDS, &c,

NO. 1.

SUGAR of lead two drachms,
White vitriol one drachm,
Strong infusion of oak bark. Mix.

NO. 2.

To one quart of water put a piece of un-slacked lime the size of a hen's egg, let it dissolve, and use the wash.

GLYSTER FOR GRIPES.

MASH two moderate sized onions,
Pour over them, oil of turpentine, two ounces,
Capsicum or pepper, half an ounce,
Thin gruel four quarts.

CHRONIC COUGH BALLS.

CALOMEL one scruple,
Gum ammoniæum and horse raddish, each two drachms,
Balsam of tolie and squills, each one drachm,
Beat all together, and make it into a ball with honey, and give every morning fasting.

HOOF LIQUID.

OIL of turpentine four ounces,

Tar four ounces.

Whale oil eight ounces.

This softens and toughens the hoof extremely,
when brushed over night and morning.

DRINK FOR CHRONIC COUGH.

TAR water and lime water, each half a pint,

Tincture of squills one ounce.

WASH FOR STRAINS.

Bay salt bruised, half a pound,

Crude sal ammoniac two ounces,

Sugar of lead quarter of an ounce,

Vinegar one pint and a half,

Water one pint.

INGRAFTING.

MODES OF GRAFTING.

THE mode of performing this operation is varied, according to the size and situation of the stock to be employed. The small stocks in the nursery, if of such kind as produce an erect strong stem, are usually grafted within or near the surface of the earth, in which case, the mould is brought round them in the form of a little hillock, and nothing more is required. When the stock is naturally inclined to branch out horizontally, the preferable mode is to insert the bud or graft high enough to form a handsome head or top. In this mode of operating, it is necessary to employ some kind of composition or covering in order to secure from injury by the weather, or influence of the sun. The following is commonly used: A quantity of clay or stiff loam is to be worked fine and mixed with some chopped hay or coarse horse-dung. It should be prepared a day or two before hand, and be beat up with a little water as needed. This should be applied closely round the part in the form of a collar, or ball, tapering at both ends, the upper end being applied closely to the graft, and the under to the stock. A good substitute for the above is a composition of turpentine, bees-wax and rosin melted together; if it prove too hard, it may

be softened with a little hog's lard or tallow. This may be applied with a brush while warm, but not too hot. A common sod applied with the grass side out, is often employed, and is found to answer every purpose. There are several different methods of performing the operation of grafting, in all which, it should be a general rule to adjust the inner bark of the stock and of the scion in close contact, and to confine them precisely in that situation. If this be accurately effected, all species of grafting will prove successful. In that method which is usually called *whip-grafting*, or *tongue-grafting*, the top of the stock and the extremity of the graft should be nearly of equal diameter. They are both to be sloped of a full inch or more, and then tied closely together. This method may be much improved, by performing what the gardeners call *tongueing* or *slipping*; that is, by making an incision in the bark part of the stock, downwards, and corresponding slit in the scion, upwards; after which they are to be carefully joined together, so that the bark of both may meet in every part, when a bandage of bass wood is to be tied tight round the scion, to prevent it from being displaced; and the whole is to be covered over with a composition. When the stocks to be grafted upon are from one to two or more inches in diameter, as branches of trees, *clift-grafting* is generally employed. The head of the stock or branch being carefully cut off in a sloping direction, a perpendicular clift or slit is to be made about two inches deep, with a knife or chissel, towards the back of the slope, into

which a wedge is to be driven, in order to keep it open for the admission of the scion. The latter must now be cut in a perpendicular direction, and in the form of a wedge, so as to fit the incision in the stock. As soon as it is prepared, it should be placed in the cleft in such a manner that the inner bark of both the stock and scion may meet exactly together. It is then to be tied with a ligature of bass, and clayed over, as is practised in whip-grafting, three or four eyes being left on the scion uncovered. It should be observed, that in making the cleft in the stock, care should be taken not to injure the pith, the scions being inserted in the sap wood of the stock or branch. Old stocks may be grafted in the bark, called *crown-grafting*, but this cannot be practised successfully till the sap be in full motion, that the bark may be easily raised from the wood. The head of the stock or thick branch is cut off horizontally; a perpendicular slit is made in the bark, as in budding; a narrow ivory folder is thrust down between the wood and the bark, in the place where the grafts are to be inserted. The graft is to be cut, at the distance of an inch and a half from its extremity, circularly through the bark, not deeper than the bark on one side, but fully half way through or beyond the pith on the other. The grafts being pointed, and a shoulder left to rest on the bark of the stock, they are inserted into the openings, and either three or four grafts are employed, according to the size of the crown. *Side-grafting* is sometimes employed for supplying vacancies on the lower parts of full-grown fruit trees.

The bark and a little of the wood are sloped off for the space of an inch and a half, or two inches; a slit is then made downwards, and a graft is cut to fit the part, with a tongue for the slit; the parts, being properly joined, are tied close and clayed over. When stocks cannot readily be produced, *root-grafting* may be successfully employed. A piece of the root of a tree of the same genus, well furnished with fibres, is selected and a graft placed on it, tied and clayed in the ordinary way. Thus united, they are set with care in a trench in the ground, the joining being covered, but the top of the graft being left two inches above ground.

"The following new mode of grafting," says Dr. Mease, (*Dom. Ency.*) "the late Mr. A. C. DuPlaine informed the editor, was long kept a secret in France. A limb of willow, of three or four inches thick, was buried in a trench deep enough to receive it, and at the distance of every four or five inches, holes were bored, into which grafts were inserted, care being taken to make the bark of the graft, and the limb into which it was inserted touch; the lower part of the graft was pointed and the bark shaved off. The limb and the grafts were then covered with earth and kept moist, and about two inches of the latter left above the surface. In process of time the limb rotted, and the grafts took root. The different grafts were then dug up and transplanted." In the same valuable publication, Dr. Mease has communicated an account of the mode of Mr. William Fairman, of "*extreme-branch grafting*," upon old decayed trees, "which promises to be of a very great

acquisition to those who take pleasure in cultivating fruit." The process is as follows: "Cut away all spray wood, and make the tree a perfect skeleton, leaving all the healthy limbs; then clean the branches, and cut the top of each off, where it should measure in circumference from the size of a shilling to about that of a crown piece. Some of the branches must of course be taken off where they are a little larger, and some smaller, to preserve the canopy or head of the tree; and it will be necessary to take out the branches which cross others, and observe the arms are left to fork off, so that no considerable opening is to be perceived when you stand under the tree, but that they may represent a uniform head. When preparing the tree, leave the branches sufficiently long to allow of two or three inches to be taken off by the saw, that all the splintered parts may be removed. The tree being thus prepared, put in one or two grafts at the extremity of each branch, and put on the cement or composition, and tie with bass or soft strings. Sever the shoots or suckers from the tree until the succeeding spring. To make good the deficiency in case some grafts do not succeed, additional grafts may be inserted in the side of the branches, or where they are wanted to form the tree into a handsome shape."

BUDDING, OR INOCULATING,

By the process of budding, we obtain the same result as in grafting; with this difference, however, the bud being a shoot in embryo, graf-

ted trees usually produce fruit two seasons earlier than budded trees. Each bud may be considered a distinct being, which will from a plant retaining precisely the peculiarities of the parent stock; and five or six species of fruit may be budded on one tree, which, when attain to the maturity of bearing fruit, exhibit a singular and beautiful spectacle. Buds are formed at the bases of the foot stalks of the leaves, and are of two kinds, those which bear leaves, and those which bear flowers. The leaf buds are small, long, and pointed; the flower buds are thick, short, and round. Both leaves and flowers are sometimes produced by the same bud, and they are generally employed, in budding, without distinction; but the bud should always be of the same genus with the tree or branch, which is to receive it. The blossom buds are formed by the first sap between April and June, and are filled by the second sap between July and October. The proper season for budding, is from the beginning of July to the end of August, at which period the buds for next year are completely formed in the axilla of the leaf of the present year, and they are known to be ready, from their easily parting from the wood. The buds preferred, are the shortest observed on the middle of a young shoot, on the outside of a healthy and fruitful tree; on no account should an immature tree, or a bad bearer, be resorted to for buds. For gathering the shoots containing the buds, a cloudy day, or an early or late hour, is chosen, it being thought that shoots, gathered in full sunshine, perspire so much as to drain the moisture from the buds. The

buds should be used as soon after being gathered as possible, and the whole operation should be quickly performed. In taking off the bud from the twig, the knife is inserted about half an inch above it, and a thin slice of the bark, and wood along with it, taken off, bringing out the knife about an inch and a half below the bud. This lower part is afterwards shortened and dressed, and the leaf is cut off, the stalk being left about half an inch long. Perhaps it is better to insert the knife three quarters of an inch *below* the bud, and to cut upwards; at least, this mode is practised in the Scottish nurseries. The portion of wood is then taken out by raising it from the bark, and pulling it downwards or upwards, according as the cut has been made from above or below. If the extraction of the wood occasions a hole at the bud, that bud is spoilt, and another must be prepared in its stead; as gardeners speak, the root of the bud has gone with the wood, instead of remaining with the bark. For the performance of the operation, provide a sharp budding-knife, with a flat thin haft, of ivory, suitable to open the bark of the stock for the admission of the bud, and also with a quantity of bass strings, or shred of Russian mats, or woollen yarn, to bind round it when inserted. On a smooth part of the bark of the stock a transverse section is now made through the bark down to the wood; from this is made a longitudinal cut downwards, about an inch and a half long, so that the incision may somewhat resemble a Roman T; by means of the flat ivory haft of the budding-knife the bark is raised a little on each side of the longitudinal incision,

so as to receive the bud. The prepared bud is placed in the upper part of the incision so made, and drawn downwards; the upper part is then cut off transversely, and the bud pushed upwards till the bark of the bud and of the stock join together. It is retained in this situation by means of tying with strands of bass, matting, or woollen yarn, applied in such manner as to defend the whole from the air and sun, but leaving the leaf stalk, and the projecting part of the bark, uncovered. In about a month after the operation, the tying is slackened; buds, that have taken, appear swelled, and the foot stalk of the old leaf falls off on being slightly touched. All shoots that spring below the budded part are carefully cut off. The head of the stalk is not removed till the following March; after this, the bud grows vigorously, and, in the course of the summer, makes a considerable shoot. Against the next spring, the shoot is headed down in the manner of young grafted trees.

According to the improved mode of Mr. Knight, the operation of budding is thus performed. In the month of June, when the buds are in a proper state, the operation is performed by employing two distinct ligatures to hold the buds in their places; one ligature is first placed above the bud inserted, and upon the transverse section through the bark; the other, the only office of which is to secure the bud, is applied in the usual way; as soon as the buds have attached themselves, the lower ligatures are taken off, but the others are suffered to remain. The passage of the sap upwards, is, in consequence, much obstructed, and the inserted buds

begin to vegetate strongly, in July; when these afford shoots about four inches long, the upper ligatures are taken off to permit the excess of sap to pass on; the wood ripens well, and affords blossoms, sometimes, for the succeeding spring. It will be perceived, that instead of the usual mode of budding, after the commencement of the autumnal flow of sap, and keeping the bud without shooting until the following spring, when the top of the stock is cut off, this improved mode gains a season in point of maturity, if not of growth, and has the effect of grafting the preceding spring, in all cases where the bud sprouts in proper time to form a strong shoot, capable of sustaining without injury, the frost of the ensuing winter.

ANOTHER METHOD OF BUDDING.

THE common method of budding fruit trees, is, by cutting crosswise into the bark of the stem, and making a perpendicular cut from thence *downwards*: the bud is then made to *descend* to the position intended for it. The reverse of this ought to happen; the perpendicular cut should rise *upwards*. This last method rarely fails of success. The reason is derived from the fact, that the sap *descends* by the bark, instead of rising; whence the bud, if placed above the transverse cut, receives abundance of sap, which it loses. if placed below it. The incision which is to receive the bud, should resemble the capital, inverted, thus, **L**, and the bark should be adjusted accordingly

It is asserted by Mr. Forsyth, that whenever an incision is made for budding, or grafting, the parts about the incision are very liable to be affected with the canker. As a preventive and curative remedy, he strongly recommends, as soon as the incision is made, and the bud or graft inserted, to rub in with the finger or brush, some of his composition, before the bass strings are tied on; then cover the bass strings all over with the composition, as thick as it can be laid on with a brush; and this, he thinks, is preferable to clay. It should be observed as a rule, not to slacken, too soon, the bass strings which are wrapped round the bud; and if the bark of the stock is found spreading open, the ligature must be carefully tightened, and suffered to remain some time longer. Mr. Yates, of Albany, says, that to satisfy his curiosity, he made the experiment of budding in the spring, when the sap juice is in full motion, and found it to succeed; but the insertion of the bud is more difficult than to do it in the summer season. A tree thus inoculated, will bear fruit one year sooner than one budded in the next summer season, and as soon as one budded the summer preceding.

NURSERY PRUNING.

Young trees properly pruned in the nursery, will, it is said, come to bearing sooner, and continue in vigor for nearly double the common time. All superfluous or rambling branches should be taken off annually, and only three or four leading shoots be left to every head.

Thus managed, the trees will not require to be lopped for a considerable time; and as they will have no wounds open in the year when transplanted, their growth will be greatly promoted. The more the range of branches shoot circularly, inclining upwards, the more equally will the sap be distributed, and the better the tree bear. Mr. Cooper, a very intelligent cultivator, remarks, that the side shoots should not be cut close to the stem, as the whole growth is thereby forced to the top, which becomes so weighty as to bend and spoil the tree. A better method is, to cut the ends of the side shoots so as to keep the tree in a spiral form, which will encourage the growth of the trunk, until it acquires strength to support a good top. The side shoots may then be cut close. In forming the top, Mr. C. has found it necessary to lighten the east and northeast sides, as fruit trees generally incline that way; and to encourage the branches on the opposite quarters, to keep the sun from the trunk; otherwise, the rays of that luminary, when striking at nearly right angles, will kill the bark, bring on canker, and ruin the tree. In Marshal's Rural Economy, we have the following directions. In pruning the plants, the *leading shoot* should be particularly attended to. If it shoots double, the weaker of the contending branches should be taken off. If the leader be lost and not easily recoverable, the plant should be cut down to within a hand's breadth of the soil, and a fresh stem trained. Next to the leader, the stem boughs require attention. The undermost boughs should be taken off by degrees;

going over the plants every winter; always cautiously preserving sufficient heads to draw up the sap, thereby giving strength to the stems and vigor to the roots and branches; not trimming them up to naked stems, as is the common practice, thereby drawing them up prematurely tall and feeble in the lower part of the stems. The thickness of the stem ought to be in proportion to its height; a tall stalk therefore requires to remain longer in the nursery than a low one. We have the respectable authority of Mr. T. Pickering, that such trees as are tall should be cut down close to the ground, to prevent their being shaken by the wind, and to promote their growth. It may seem strange, he observes, to advise the cutting down a tall, well-grown plant, yet it is necessary; for the roots are always hurt and shortened by the removal; it is impossible for those that remain, to nourish the same body; this is the reason we so often find our trees dead at top and hide-bound. Should my directions, he says, be followed, which are from thirty years experience, such vigorous shoots will spring up, as will in ten years become much larger trees than if they had stood uncut for forty years; and the bark and every appearance of the tree will be like one from the seed, and much trouble will be saved in staking, to prevent their ruin from the wind. This method has not, we believe, been very frequently adopted, although recommended by other cultivators beside the venerable author just cited, the result of whose long experience, and the reasons assigned for the

practice, must be deemed satisfactory. It has been stated by an English author, that when young trees are planted out from the nursery, as soon as they begin to break in the spring, they are to be cut down to three or four eyes, according to their strength, to furnish them with bearing wood. If this were not done, they would run up in long naked branches, and would not produce one quarter of the fruit which they would when this is properly performed.

MATERIALS USED IN GRAFTING.

PROCURE a strong pruning knife for cutting off the heads of the stocks previous to their preparations by the grafting knife for the scion. A small saw for larger stalks, and a pen-knife for small scions, a chissel and mallet for cleft grafting. Bass ribbons as ligatures, and wax to cover the wounds.

Scions of Pears, Plumbs, and Cherries, are collected in the month of February, (the early part of the month is best.) They are kept at full length and sunk in dry earth and out of the reach of frost till wanted, which is sometime from the middle of February to the middle of April. Scions of Apple should be cut in March, before the buds begin to swell.

In July grafting, the scions are used as soon as cut.

*Method of forcing Fruit trees to Blossom and
bear Fruit.*

WITH a sharp knife cut a ring round the limb or small branch which you wish should bear; near the stem or large bough where it is joined; let this ring or cut penetrate to the wood. A quarter of an inch from this cut, make a second like the first, encircling the branch like a ring a quarter of an inch broad between these two cuts. This bark, between these two cuts, must be removed clean down to the wood; even the fine inner bark, which lies immediately upon the wood, must be scraped away, until the bare naked wood appears, white and smooth, so that no connexion whatever remains between the two parts of the bark. The barking or girdling must be made at the precise time when, in all nature, the buds are strongly swelling, or about breaking out into blossom. In the same year, a callous is formed at the edges of the ring, on both sides, and the connexion of the bark is again restored, without any detriment to the tree or the branch operated upon. By this simple operation, the following advantages will be obtained; 1. Every young tree of which you do not know the sort, is compelled to show its fruit, and decide sooner whether it may remain in its present state or require to be grafted. 2. You may thereby, with certainty, get fruit of a good sort, and reject the more ordinary. The branches so operated upon, are hung full of fruit, while others, that are not ringed, often have none, or very little on them.

This effect is explained from the theory of the sap. As this ascends in the wood and descends in the bark, the above operation will not prevent the sap rising into the upper part of the branch, but it will prevent its descending below this cut, by which means it will be retained in and distributed through the upper part of the branch in a greater portion than it could otherwise be, and the branch and fruit will both increase in size much more than those that are not thus treated. The twisting of a wire or tying a strong thread round a branch has often been recommended as a means of making it bear fruit. In this case, as in ringing the bark, the descent of the sap in the bark must be impeded above the ligature, and more nutritive matter is consequently retained, and applied to the expanding parts. The wire or ligature may remain in the bark.

Mr. Knights theory of the motion of sap in trees, is, "that the sap is absorbed from the soil by the bark of the roots, and carried upwards by the alburnum of the roots, trunk and branches: that it passes through the central vessels into the succulent matter of the annual shoots, the leaf-stalk and leaf; and that it is returned to the bark through certain vessels of the leaf-stalk, and descending through the bark, contributes to the process of forming the wood.

A writer in the *American Farmer*, says. he tried the experiment of ringing some apple, peach, pear. and quince trees on small limbs, say from an inch to an inch and a quarter in diameter. The result was, the apples, peaches, and pears were double the size on those

branches, than on any other part of the trees; in the quinces there was no difference. One peach, the heath, measured on a ringed limb, in circumference 11 1-4 inches round, and 11 3-4 inches round the ends, and weighed 15 ounces. The limbs above the ring have grown much larger than those below it.

Directions for making a composition for curing diseases, defects, and injuries in all kinds of fruit and forest trees, and the method of preparing the trees, and laying on the composition, by William Forsyth.

TAKE one bushel of fresh cow-dung, half a bushel of lime rubbish of old buildings, (that from the ceiling of rooms is preferable) half a bushel of wood-ashes, and a sixteenth part of a bushel of pit or river sand: the three last articles are to be sifted fine before they are mixed; then work them well together with a spade, and afterwards with a wooden beater, until the stuff is very smooth, like fine plaster used for the ceiling of rooms.—The composition being thus made, care must be taken to prepare the tree properly for its application, by cutting away all the dead, decayed, and injured parts, till you come to the fresh sound wood, leaving the surface of the wood very smooth, and rounding off the edges of the bark, with a draw-knife, or other instrument, perfectly smooth, which must be particularly attended to: then lay on the plaster about one eighth of an inch thick all over the part where the wood or bark has been so cut away, finishing off the

edges as thin as possible: then take a quantity of dry powder of wood-ashes, mixed with a sixth part of the same quantity of the ashes of burnt bones: put it into a tin box, with holes in the top, and shake the powder on the surface of the plaster till the whole is covered over with it, letting it remain for half an hour to absorb the moisture; then apply more powder, rubbing it on gently with the hand, and repeating the application of the powder till the whole plaster be comes a dry and smooth surface. Where lime rubbish of old buildings cannot be easily got, take pounded chalk, or common lime, after having been slacked a month at least.

As the best way of using the composition is found by experience to be in a liquid form, it must therefore be reduced to the consistence of pretty thick paint, by mixing it up with a sufficient quantity of urine and soap suds, and laid on with a painter's brush. The powder of wood ashes and burnt bones is to be applied as before directed, patting it down with the hand.

When trees are become hollow, you must scoop out all the rotten, loose, and dead parts of the trunk till you come to the solid wood, leaving the surface smooth; then cover the hollow, and every part where the canker has been cut out, or branches lopped off, with the composition, and as the edges grow, take care not to let the new wood come in contact with the dead, part of which it may be sometimes necessary to leave; but cut out the old dead wood as the new advances, keeping a hollow between them, to allow the new wood room to extend

itself, and thereby fill up the cavity, which it will do in time, so, as to make, as it were, a new tree. If the cavity be large, you may cut away as much at one operation as will be sufficient for three years. But in this you are to be guided by the size of the wood and other circumstances. When the new wood, advancing from both sides of the wound, has almost met, cut off the bark from both the edges, that the solid wood may join, which, if properly managed, it will do, leaving only a slight seam in the bark. If the tree be very much decayed, do not cut away all the dead wood at once, which would weaken the tree too much and endanger its being blown down by the wind. It will, therefore, be necessary to leave part of the dead wood at first to strengthen the tree, and to cut it out by degrees as the new wood is formed: If there be any canker or gum oozing, the infected parts must be pared off or cut with a proper instrument. When the stem is very much decayed and hollow, it will be necessary to open the ground and examine the roots; then proceed as directed for hollow peach trees.

By using the composition in a liquid state, more than three fourths of the time and labour is saved; and I find it is not so liable to be thrown off as the lips grow, as when laid on in the consistence of plaster: it adheres firmly to the naked part of the wound, and yet easily gives way as the new wood and bark advances.

In his introduction to the American edition of Forsyth, Mr. W. Cobbet says, "During the last summer, (1801,) I went with a party of friends

to be an eye-witness of the effects (of which I had heard such wonders related) of this gentleman's mode of cultivating and curing trees; and though my mind has received a strong prepossession in its favour, what I saw far surpassed my expectation. Mr Forsyth, whose book was not then published, did us the favour to show us the manuscript of it, and also the drawings for the plates, After having read those parts of the manuscript which more immediately referred to the drawings, we went into the gardens, and there saw every tree which the drawings were intended to represent, and of which we found them to be a most exact representation. We examined these trees from the ground to the-topmost branches; we counted the joints in the wood; ascertained the time and extent of its growth; and, in short, verified every fact that the book related. To raise fine, flourishing wood from an old, cankered, gummy, decayed, stem; to raise as much wood on that stem in three years as could have been raised on the finest young tree in twelve years; to take the rotten wood from the trunk; to replace it with sound wood, actually to fill up the hollow, and of a mere shell to make a full, round, and solid trunk; all this seems incredible, but of all this we saw indubitable proof." In the work just referred to, we have the valuable observations of Peter W. Yates esquire, of Albany, respecting Forsyth's treatise, as follows: "Mr. Forsyth's treatise is well calculated to rouse the care and attention of gentlemen on this side of the Atlantic, to the

cultivation and management of fruit trees. The perusal of his pamphlet, London edition, 1791, afforded him both satisfaction and astonishment. To renovate diseased trees fast hastening to decay, and to increase the quantity and meliorate the quality of the fruit, in the way prescribed by him, seemed almost incredible." But Mr. Y. was induced to make the experiment. Accordingly in May 1796, he adopted the mode of progress prescribed by Forsyth, on a young bearing (bonecretien) pear tree, the bark of which, as well as the alburnum or sap wood, and the heart wood, were dead from the ground upward about five feet. He cut away all the dead part leaving nothing but the bark on the opposite side, and applied the composition. The effects were soon visible: the external part of the wound, which composed about one third part of the trunk, was in a few days surrounded by a callus or lip, which continued to increase until the sap-flow was obstructed and stagnated by the next autumnal frost; but by the subsequent annual flow of the juices, the callus increased so as to fill the wounded part with new wood. The old and new wood united, and is covered with new bark. In many other instances, he made similar experiments on various kinds of fruit trees with satisfactory success. He is, therefore, of opinion, that Forsyth's remedy affords a radical cure for diseases, defects, and injuries in all kinds of fruit trees, and that in pruning, especially where large amputations are made, the composition ought always to be applied, as it prevents the exuding of the vegetable

juices through the wounded parts, aids and precipitates the healing of the wounds, promotes the vigour and health of the tree, and adds to the size and flavour of the fruit.

The composition of Mr. Forsyth does not, at this day, sustain such high reputation as formerly. It is not supposed to possess great efficacy as a medicament when applied to diseased trees; and for the purpose of defence against wet and heat, it is not perhaps preferable to an ointment composed of rosin, beeswax, and turpentine. It is probable, that a composition consisting of clay, tempered with horse dung and urine, would be found of equal utility. We are not unacquainted with instances of surgeons acquiring great celebrity by the application of certain medicaments to old ulcers, when in verity the cure was effected by the efforts of nature.

*Means of preventing the flowers and fruit falling off.
and of retarding their opening.*

THE means proposed to retard the opening of flowers, consists in making, in the autumn, a ligature on the stems of the young trees; that compression slackens the motion of the sap's rising, and the tree blossoms the later. Fruits are also liable to fall off as well as flowers. We see trees, which, after having had a great abundance of flowers, are covered with young fruit, that promises the most plentiful crop; but it sometimes happens that they almost all drop

off. This accident is too frequent with apple and pear trees. The way to remedy this inconvenience, is, to sprinkle the root or foot of the trees, when they are in blossom, with five or six buckets of water; and to preserve the humidity, the bottom must be covered with straw, which prevents too hasty an evaporation of the water: by these means the flowers and buds are preserved from falling off.

FARMER'S ACCOUNTS.

STOCK ACCOUNT.

INCREASE AND DECREASE OF LIVE STOCK.							
	Discription	BREED	No.	INCREASE BY		decrease by	
				PURCHASE	BIRTH	DEATH	SAL
SHEEP.	Rams,	Merino,	No.				
	Ewes,	½ do.	50	50	100	0	30
	Wethers,	Saxon,					
	R. lambs,	common,					
CATTLE.	E. lambs,						
	Bulls,	short	1	0	0	0	1
	Cows,	horned,	40	20	0	0	60
	Oxen,						
	Hiefers,						
SWINE.	B. calves,						
	H. calves,						
	Boars,	Bedford,	1	0	0	0	1
	Sows,	3	0	0	0	0	3
HORSES.	Barrows,						
	Pigs,						
	Horses,	Eclipse,	4	0	0	0	4
	Mares,		1	0	0	0	1
POULTRY AND EGGS.	Colts,						
	Turkies,						
	Fowls						
	Geese,						
	Pigeons,						
	Eggs,						

WEEKLY JOURNAL OF TRANSACTIONS, FROM TO

		STATE OF THE WEATHER.			
		Bar.	Ther	Wind.	Rain.
MONDAY,					
TUESDAY,					
WEDNESDAY,					
THURSDAY,					
FRIDAY,					
SATURDAY,					
SUNDAY,					

FAMILY RECEIPTS.

10
WEEKLY STATE OF LABOUR, FROM

[illegible]

GASH ACCOUNT.

CASH RECEIVED,				CASH PAID.			
Dr.							
When Received.	Of whom received,	On what account Received,	Amount \$ cts.	When Paid, 1831	To whom Paid,	On what Account Paid,	Amount. \$ cts.
January, February, March,	1 Clark Rice, Jr. 3 R. Door, 2 Tho's. Scott,	500 lbs. Pork, 100 lbs. Butter, one black Horse,	1500 00 25 00 100 00	January, February,	1 Clark Rice, Jr. Wm. Mills,	Merchandise, Shoe Making,	500 00 8 00
Total Received,			1625 00	Total paid			515 50

ARTICLES FROM THE FARM CONSUMED.			
When,	By whom,	What Articles,	
June, July,	30 Family, 10 Fed to Cattle,	20 bus. corn do. do.	5 00 2 50
Total paid			7 50

It is a maxim of the Dutch, that "*no one is ever ruined who keeps good accounts.*"

In regard to the expenses laid out on a farm an accurate account is perfectly practicable, and ought to be regularly attended to by every prudent and industrious Farmer. This will enable him to ascertain the nature and extent of the expense he has incurred, in the various operations of Agriculture, and to discover what particular measures or what general system, contributes to profit, or occasions loss.

The preceding tables will be understood without any further explanations. They should be drawn off in a book of sufficient size to admit room under each head to write the several articles.

PROMISSORY NOTES.

WITHOUT INTEREST.

\$100,00

Cincinnati, March 1st, 1831.

Sixty days after date I promise to pay John Sharp or order, One hundred dollars.

Value received. WILLIAM DOE.

WITH INTEREST.

\$1500,00

Cincinnati, April 6th, 1831

Ninety days after date for value received, I promise to pay John Sharp or bearer, One thousand five hundred dollars, with interest from this date.

JOHN DOE

*Payable to the person to whom the note is given and
no other.*

\$570,50

Lexington, May 1st, 1831.

Thirty days after date I promise to pay to
Jeremiah Hanks Five hundred and seventy
dollars and fifty cents. Value received

PETER H. SHARP.

ON DEMAND.

\$500,00

Indianapolis, July, 10th 1831.

On demand I promise to pay to the order of
Richard Doe Fifty dollars. Value received.

JONATHAN HOPKINS.

ANOTHER ON DEMAND.

\$25,25

Cincinnati, June 1st, 1831.

On demand I promise to pay to John Doe or
order Twenty five dollars and twenty five
cents. Value received

RICHARD DOE.

ANOTHER ON SIGHT.

\$200,00*Louisville, Januery, 1st 1831.*

Good, at sight for Twenty dollars. Value received.

JOSEPH DON.

NOTE PAYABLE IN INSTALMENTS.

\$400,00*Madison, April 4th, 1831.*

For value received I promise to pay Jonathan James or order four hundred dollars in the following instalments. (viz.) One hundred dollars on the first day of May next, and the further sum of one hundred dollars on the tenth of July next, and the remaining sum of two hundred dollars on the first day of January, Eighteen hundred and thirty two, with lawful interest from the payment of the first instalment herein named.

WILLIAM CASH.

NOTE GIVEN BY TWO OR MORE.

\$300,00*Connersville, May 1st 1831.*

We jointly and severally promise to pay Daniel Blank Jr. or order on the third of December next, three hundred dollars for value received.

JOHN J. PHILLIPS.

BENJAMIN OGLETHORP.

A NOTE PAYABLE IN PRODUCE.

\$30,00*Jamestown, April 1st 1831.*

Thirty days after date for value received I promise to pay James Hodges Jr. or order the value of thirty dollars, in merchantable wheat, at the market price at the time this becomes due.

JOHN PETERS, *Senior*

ANOTHER.

\$300,00*Jamestown, April 1st, 1831.*

For value received I promise to pay Hugh Fisk or order an equivalent to the sum of

three hundred dollars payable in the following manner, (viz.) The value of one hundred dollars on the first of may next in (*here name the species of stock or produce.*) The further sum of two hundred dollars on the tenth of June next in (*here name the articles &c. particularly,*) all of which articles, goods or chattles are to be in good merchantable order, and valued at the market price at the several periods on which they become due.

THOMAS FLIM, Jr.

JUDGEMENT NOTE.

I promise to pay William Dunallen Jr. of the City of Cincinnati, merchant, or order five hundred dollars with lawful interest, on the first day of June ensuing, for value received And further, I do hereby empower any attorney of any of the courts of the City of Cincinnati, or of any other court of record of Ohio to confess judgement for the above sum and costs with release of errors &c. Witness my hand and

seal this first day of May A. D. one thousand
eight hundred and thirty.

Signed sealed and
delivered in pre-
sence of

JOHN I. WORTHY



A. B.

C. D.

BILLS.

BILL OF EXCHANGE.

\$500.00

Cincinnati, June 1st, 1831.

Ten days after sight, pay to the order of John J. Mills five hundred dollars, value received without further advice, which charge to the account of **DAVID READYMONEY.**

Messrs. Floyd, Jones, & Co.

Cincinnati.

A PENAL BILL.

THIS bill bindeth me, Andrew Brownson of——— in the sum of fifty dollars to be paid unto John Y. Yates, his certain attorney, executors, administrators, or assigns, on or before the——day of——— which will be in the year —— together with lawful interest for the same: For the true payment, wherefore, I do bind myself, my heirs, executors, and administra-

tors, and each of them unto the said John Y. Yates his executors, administrators, and assigns in the penal sum of eight hundred dollars.

In witness &c.

A. B. C.



A MERCANTILE BILL.

Israel Thompson,

To H. L. Barnum, Dr.

For three hundred bushels of wheat, at one
dollar per bushel - - - \$300, 00

One cow at thirty dollars, - - 30, 00

Three tons of hay at ten dollars per ton 30, 00

Payment received. \$360, 00

Cincinnati May 1st, 1831.

PHILO JONES

for

H. L. BARNUM.

RECEIPTS.

Received this first day of May A. D. 1831
from Frederic Pay, thirty dollars, being in full,
for one cow sold by me to the said Frederick
Pay.

\$30,00

CHARLES P. BLAIR,

Cincinnati, May 20th, 1831.

Received this day of Peter Paymaster one
hundred dollars, being in full of all demands.

\$100,00

CHARLES ROBINSON,

MONEY RECEIVED BY THE HAND OF A THIRD PERSON.

Received the twentieth day of September
A. D. 1831. from Henry Hobbs, by the hand
of Moris Billings the sum of two hundred dollars,
in full for sundry articles of produce, bought by
the said Henry Hobbs from me.

\$200,00

AMOS B. PHELPS.

RECEIPT FOR A PROMISSORY NOTE.

Received, Versailles, May first A. D. 1831,
from Richard Doe, his promissory note, payable
to me or order three months after date, for five
hundred dollars, due to me for certain produce
bought from me by the said Richard Doe,
which when paid will be in full of all demands.

Note of \$500,00

H. B.

FOR AN ORDER DRAWN UPON A THIRD PERSON.

Received the——day of &c. from D. Doe
an order drawn in my favour upon Conrad
Hughs Jr. for the sum of———upon sight,
which when paid will be in full of all demands
I have against the said D. Doe.

SAMUEL HARRISON.

A SHORT BUSINESS ORDER.

Mr. John James,

Please pay H. L. B——
five dollars, and charge the same to my ac-
count.

PHILIP HAYS.

RECEIPT FOR PROPERTY LEFT ON SALE.

Received this first day of June A. D. 1831
 from James Johnson one Bay horse (*or any
 other article as the case may be*) which I am
 to sell for—————(*here mention the terms*)
 and duly account to the said James Johnson for
 the same.

JAMES PETERS, Jr.

*Agreement between a Master and Overseer or Labourer,
 about the management of a Farm.*

ARTICLE of agreement, between Adam Painter of, &c. of the one part, and John Stewart of, &c. of the other part, as follows, viz:—

Whereas the said Adam Painter hath agreed with and hired the said John Stewart, to be his overseer or labourer (as the case may be) for the well ordering, improving, and managing, for the best and most profit and advantage of the said Adam, in good husband-like manner as herein after mentioned, all that farm, messuage, or tenement, barns, stables, out-houses, lands, meadows, and pasture-ground, with the appurtenances thereunto belonging, now in the tenure or occupation of the said Adam, situated in Blockley, and commonly called or known by the name of Painter's Grange, for the term of one year from the first day of April next coming, after the date thereof, and so from year to year afterwards, for and during the term of three years more, if he the said Adam Painter shall think fit to retain the said John Stewart, in

his said service, and not otherwise, at and for the yearly salary or wages of three hundred dollars, payable quarterly as herein after mentioned: Now it is thereupon covenanted, agreed, and concluded, by and between the said parties to these presents, for themselves, their executors, administrators, and assigns, in manner and form following, that is to say: the said John Stewart, for himself, his, &c. doth covenant, &c. to and with the said Adam Painter, his, &c. by, &c. that the said John shall and will, with the assistance herein after covenanted to be afforded to him by the said Adam, in a good husband-like manner, and at seasonable time, in the year, from time to time during so long as he shall continue in the the said service of the said Adam, well and sufficiently plough and keep in tillage the number of one hundred acres, little more or less, parcel of the farm aforesaid, every year, yearly, and shall and will leave——acres thereof, to be laid fallow every other year, and plough the same——acres three times before it be sown again; and shall sow or plant the remaining——acres at seasonable times in the year with such corn and seed as the said Adam, his executors, or assigns, shall from time to time direct and appoint; and the same so sown or planted shall in good husband-like manner, harrow or plough: And that he the said John Stewart, with the workmen to be furnished him by the said Adam Painter, shall, from time to time, during the term of four years, or so long thereof as he shall remain in the said service of the said Adam, at seasonable times in the year, in

a good husband-like manner gather, husk, and crib, all the corn, and reap, cut down, and shock, all the grain that shall stand, grow, or be in or upon the said farm, or any part thereof, and do all other things that shall be convenient for making the same fit to be housed, and then shall fetch in and lay up the same in the barn belonging to the farm: And also, well and sufficiently repair, maintain, keep, and amend, the fences and enclosures of or belonging to the said farm and premises, in, by, and with, all needful and necessary repairs, and amendments during the said term: And shall and will manure all the meadows of the said farm from the first day of April to the twenty-first day of June, or so much longer every year during so long of the said term of three years as he shall continue in the said service of the said Adam, his executors, or assigns, as shall be convenient for hay: And shall and will also, at seasonable times in the year, yearly, during the said term, in good and husband-like manner, mow all the said meadows, and in like manner make up all the hay, and carry it from the said meadow to the yard belonging to the said farm, and there lay it up in a stack or stacks: And shall and will lay all the dung, soil, and compost, that shall be made in or about the yard and out-houses belonging to the said farm, and such other dung and soil as the said Adam shall buy or provide for that purpose, to and upon such part of the lands and grounds of the said farm as the said Adam, or his executors or assigns, shall from time to time direct and appoint; and at seasonable times in the year shall there spread the

same: In consideration of all which premises, he the said Adam Painter, for himself, his executors, administrators, and assigns, doth covenant, grant, and agree, to and with the said John Stewart, his executors and assigns, by these presents, in manner and form following, that is to say; that he the said Adam Painter, his executors, administrators, or assigns, shall and will well and truly pay, or cause to be paid, unto the said John Stewart, the said yearly wages or salary of three hundred dollars, during so long of the aforesaid term of four years, as he the said John shall continue in the said service and employment of the said Adam, on the four quarterly days, that is to say, on the first days of April, July, October, and January, in equal portions, and shall during the same time allow him to occupy with his family, the following premises, viz ———; and shall moreover furnish him with workmen of the following descriptions, viz. ———, to be under his control and direction for the purposes herein before particularly mentioned. In witness whereof, &c.

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A VOCABULARY.

Giving the definition of such technical or uncommon words as are used in this work.

Absorbent,—Imbibing. Swallowing. In *medicine* a testaceous powder, or other substance, which imbibes the humors of the body.

Accelerate,—To add to natural or ordinary progression; as to *accelerate* the growth of a plant.

Access,—A coming to. a near approach, admittance, admission, as to gain *access* to a prince.

Acetate,—In *chemistry*, a neutral salt, formed by the union of the acetic acid with any salifiable base

Affinity,—Attraction elective attraction, or that tendency which different species of matter have to unite, and combine with certain other bodies, and the power that disposed them in combination.

Aliment,—That which nourishes, food, nutriment.

Alkali,—Any substance, which, when mingled with acid produces ebullition and effervescence.

Alluvial,—Added to land by the wash of water.

Ameliorate,—To gross, better, meliorate.

Analogous,—Bearing some resemblance or proportion.

Anodyne,—Assuaging pain, causing sleep, or insensibility.

Antiseptic,—Opposing or counteracting putrefaction.

Antidote—Whatever tends to prevent mischievous effects, or to counteract the evil which something else might produce.

Anther,—In *Botany*, the summit or tops of the pistil, connected with the flower.

Aquatic,—A plant which grows in water, as the flag.

Arenacious,—Sandy; having the properties of sand; Brittle.

Aromatic,—Fragrant; spicy; strong scented; odoriferous; having an agreeable odor.

Asthma,—A shortness of breath, with cough, and wheezing.
 Axillar,—Pertaining to the armpit, or the axil of plants.
 Biennial,—Continuing for two years, and then perishing.
 Bonfire,—A fire made as an expression of public joy and exultation.

Brassica,—Cabbage.

Carbon,—Pure charcoal; a simple body, black, brittle light and inodorous.

Carbonate,—A compound formed by the union of Carbonic Acid with a base; as the *carbonate* of lime.

Carnation,—Flesh color; A genus of plants, *dianthus*, so named from the color of the flower.

Chauldron,—A measure of coals, containing 36 bushels.

Chlorine,—A compound of chloric acid with a soleasiable base.

Chromic,—Pertaining to chrome; *chromic yellow*, a beautiful pigment.

Chylifactive,—Forming or changing into chyle.

Chymify,—To form or become chyme.

Clarified,—Purified; made clear and fine.

Coagulating,—Curdling, congealing.

Cochineal,—An insect. These insects form a mass or drug, which is the proper *cochineal* of the shops, it is used in giving red colors, and for making carmine.

Coddle,—To parboil, or soften by the heat of water.

Collateral,—Running parallel, diffused on either side, springing from letations.

Composts,—A mixture or composition of various manuring substances for fertilizing land.

Congenial,—Partaking of the same genus, kind or nature.

Contrayerra,—A genus of plants *dorstenia*.

Cruciform,—Cross shaped.—In *botany*, consisting of four equal petals, disposed in the form of a cross.

Corolla,—Inner covering of a flower.

Cryptogamy,—A term applied to plants whose stems and pistils are not well ascertained

Culinary,—Relating to the kitchen, or to the art of cookery; used in kitchens.

Decoction,—Water impregnated with the principles of any animal or vegetable substance.

Decomposition,—The act of separating the constituent part of a substance which are chemically combined.

Degeneracy,—Growing worse, or inferior.

Desiccation,—The act of making dry, the state of being dried

Diaforetic,—Having the power to increase perspiration.

- Digestive**,—Having the power to cause digestion in the stomach; Capable of softening and preparing by heat.
- Diluted**,—Rendered more fluid; weakened, made thin, as liquids.
- Dredge**,—To sprinkle flour on roast meat.
- Duodenum**,—The first of the small intestines.
- Dyspepsy**,—Bad digestion, difficulty of digestion.
- Ebullition**,—The operation of boiling.
- Elixir**,—A compound tincture, extracted from two or more ingredients; Quintessence; refined spirits.
- Epicure**,—A man devoted to sensual enjoyments, one who indulges in the luxuries of the table.
- Esculent**,—Eatable, that is or may be used by man for food.
- Espalier**,—A row of trees planted about a garden, or in hedges.
- Essential**,—Pure, highly rectified.
- Extirpate**,—To pull or pluck up by the roots; to root out, to eradicate, to destroy totally.
- Exuberant**,—Abundant, plenteous, rich, pouring forth in abundance, producing in plenty.
- Farina**,—In *botany*, the pollen, fine plants, and which is supposed to fall on the stigma, and fructify the plant; In *chemistry* starch or fricula, one of the proximate principles of vegetables.
- Fecundating**,—Rendering fruitful.
- Flexible**,—Plant, yielding to pressure, not stiff.
- Fricassee**,—A dish of food made by cutting chicken, rabbits, or other small animals into pieces, and dressing them in a frying pan, or other utensil.
- Fugaceous**,—Flying or fleeing away, volatile.
- Fumigate**,—To smoke, to perfume.
- Gelatinous**,—Of the nature and consistence of gelatins resembling jelly moderately stiff and cohesive.
- Germ**,—In *botany*, the ovary or seedbed of a plant, the origin, first principle, that from which any thing springs.
- Germinate**,—To cause, to sprout.
- Glutinous**,—Having the quality of glue: In *botany*, besmeared with a slippery moisture.
- Grill**,—To broil.
- Gusto**,—Relish, pleasantness to the taste.
- Harcot**,—In *French*, beans, a kind of ragout of meat and roots.
- Hermetically**,—Closely, accurately.
- Humid**,—Moist, damp, containing sensible moisture.

- Humidity**,—Moisture in the form of visible vapor, or perceptible in the air.
- Incision**,—The separation of the surface made by a sharp instrument.
- Incongruous**,—Unsuitable, not fitting inconsistent, improper.
- Indubitable**,—Not to be doubted, unquestionable, evident.
- Infused**,—Poured in, instilled, steeped.
- Insolated**,—Exposed to the sun, dried or matured in the sun's rays.
- Investigation**,—A careful inquiry to find out what is unknown.
- Irrigation**,—The operation of causing water to flow over lands for nourishing plants.
- Lees**,—The grosser part of any liquor which have settled on the bottom of a vessel; dregs, sediments,
- Leguminious**,—Pertaining to pulse, consisting of pulse.
- Ligneous**,—Wooden, made of wood, resembling wood.
- Lignumvitæ**,—*Guaiacum*, or pock wood, a genus of plants natives of warm climates.
- Lincture**,—Medicine taken by licking.
- Macaroni**,—A kind of paste, made of flour, eggs, sugar and almonds, and dressed with butter and spices.
- Masticated**,—Chewed.
- Medicated** —Prepared or furnished with any thing medicinal.
- Microscope** —An optical instrument consisting of lenses or mirrors which magnify objects.
- Mucous**,—Slimy, ropy and lubricous, secreting a slimy substance.
- Nomenclature**,—The names of things in any art or science, or the whole vocabulary of names or technical terms which are appropriated to any particular branch of science.
- Nutritive**,—Having the quality of nourishing.
- Obvious**,—Readily perceived by the eye or the intellect.
- Opaque**,—Impevious to the rays of light, not transparent, dark, obscure of a roundish form.
- Oval**,—A body or figure in the shape of an egg.
- Ovary**,—The part of female animal in which the eggs are formed or lodged, or the part in which the foetus is supposed to be formed.
- Oxyd**,—A substance combined with oxygen, without being in the state of an acid.
- Parboil**,—To boil in part, to boil in a moderate degree.
- Pasticcio**,—A medly, an olio.

- Pathology**,—The part of medicine which explains the nature of diseases, their cause and symptoms.
- Peat**—A substance resembling turf, used as fuel.
- Perforated**—Bored or pierced through.
- Peristaltic**—Spiral, vermicular, or worm-like.
- Peritoneum**,—A thin smooth lubricous membrane investing the whole internal surface of the abdomen, and, more or less completely, all the viscera contained in it.
- Phrenology**,—The science of the mind as connected with the supposed organs of thought and passion in the brain.
- Physiognomy**,—The art or science of discerning the character of the mind from the features of the face.
- Physiology**,—The science of the properties and functions of animals and plants. The science of the mind.
- Poignant**,—Pointed; keen; better; irritating; satirical.
- Pollen**,—The fecundating dust, contained in the anther of flowers which is disposed on the pistil for impregnation.
- Precocity**,—Rapid growth and ripens before the usual time; prematureness.
- Prescription**,—The act of prescribing or directing by rules; *particularly*, a medical direction of remedies for, and the manner of using them; a recipe.
- Procrastination**,—A putting off to a future time; delay.
- Procreation**,—The act of begetting; generation and production of young.
- Pulp**,—The soft succulent part of fruit.
- Pulverized**,—Reduced to fine powder.
- Pungent**,—Pricking; stimulating; affecting the tongue like small sharp points.
- Putrid**,—Corrupt; rotten.
- Pyramidal**,—Having the form of a Pyramid.
- Radial**,—Pertaining to the radius or the forearm of the human body.
- Rancid**,—Having a rank smell; strong scented; sour; musty.
- Rectum**,—The third and last of the large intestines.
- Reservoir**,—A place when any thing is kept in store, *particularly* water.
- Resuscitate**,—To revive; to recover from apparent death.
- Rosaceous**,—Rose-like, composed of several petals, arranged in a circular form.
- Rotation**,—Vicissitude of succession.
- Saccharim**,—Pertaining to sugar; having the qualities of sugar.
- Salamander**,—An animal of the genus *lecarta* or lizard.

- Saturating,---Supplying to fullness.
- Sediment,---The matter which subsides to the bottom of liquor settlings; dregs.
- Sexual,---*Sexual system*, in *botany*, the system which ascribes to vegetables the distinction of sexes.
- Skewer,---A pin of wood or iron for fastening meat to a spit, or for keeping it in form while roasting.
- Specifically,---In such a manner as to constitute a species; according to the nature of species.
- Stercorary,---A place properly secured from the weather for containing dung.
- Stigma,---In *botany*. The top of the pistil, or pointal, an organ of female flowers, adhering to the fruit for the reception of the pollen.
- Subterraneous,---Being or lying under the surface of the earth; situated within the earth or under ground.
- Succulent,---Full of juice; juicy.
- Sulphate,---A neutral salt, formed by sulphuric acid in combination with any base.
- Superfluous,---More than is wanted.
- Tainted,---Impregnated with something nauseous, disagreeable to the senses, or poisonous; infected; corrupted; stained.
- Technically,---According to the signification of terms of art.
- Tincture,---A spiritous solution of such of the proximate principles of vegetables and animals as are soluble in pure alcohol or proof spirit; a tinge or shade of color.
- Topical,---Pertaining to a topic or subject of discourse, or to a general head.
- Trellis,---A frame of cross-barred work, for supporting vines.
- Trussed,---Packed or bound closely.
- Tuberous, ---Consisting of roundish, or fleshy bodies, or tubers, connected into a bunch by intervening threads.
- Tutty,---An argillaceous ore of zinc, found in Persia.
- Venery,---The pleasures of the bed; the act or exercise of hunting; the sports of the chase.
- Ventilated,---Exposed to the action of the air; fanned.
- Veterinary,---Pertaining to the art of healing or treating the diseases of domestic animals, as oxen, horses, sheep, &c.
- Vitality,---Power of subsisting in life; the principle of animation, or of life.
- Wary,---Cautious of danger; carefully watching and guarding against deception.

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